FEDERAL RESERVE POLICY

1921-1930

BY

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To

KENNETH, DORIS, AND ROGER

WHO HAVE BEEN QUITE UNSYMPATHETIC
TOWARD THIS PROJECT

PREFACE

Many books and many brief treatises have been written about federal reserve matters, but in no one of them is there to be found any comprehensive statement of the way in which the system's operations have been adapted to meeting the problems of specific situations. In the author's "Development of Federal Reserve Policy" five chapters were devoted to the discussion of early periods in the system's history. But this book was published in 1922, and, as will be asserted again, more has been accomplished since, than before, that date, not only in developing the technique of reserve banking operations but, also, in providing the reserve administration with its effective background of experience. The present volume is accordingly offered to fill in this gap in our banking literature. It is hoped that it will be serviceable not only to college students in money and banking but also to such business men, bankers, and economists as have been keenly interested in the reserve system's history. No attempt, however, has been made to make the book readable to those totally unfamiliar with federal reserve procedure.

Particularly during the year in which he was engaged by the U. S. Chamber of Commerce to assist in that body's investigation of the reserve system's adaptability to present needs, the author had the opportunity to converse about reserve problems with so many bankers and economists that it is impossible to give the names of all to whom he is indebted for the information and opinions which have led to his conclusions. Special mention may be made, however, of Mr. Paul M. War-

burg, a former member of the Federal Reserve Board, of Mr. Carl Snyder and Mr. Randolph Burgess of the New York Reserve Bank, of Mr. Harry A. Wheeler of the First National Bank of Chicago, of Prof. O. M. W. Sprague of Harvard University, of Mr. A. C. Miller of the Federal Reserve Board, of Mr. John J. O'Connor of the U. S. Chamber of Commerce, and of Mr. E. A. Goldenweiser of the Board's Division of Research and Statistics. Needless to say, the conclusions herein reached may not be acceptable to any of these gentlemen.

The author has tried to bear in mind that it is easy to engage in unjust criticism of the reserve administration if, for the confused understanding of the moment, more exact information of later date is constantly substituted. On this account the endeavor is made to view the difficulties confronting the reserve administration from the standpoint of the going problem. The author has tried to avoid conclusions which it would not be possible to reach except by the utilization of material unavailable at the time to which they apply. Inasmuch, moreover, as statistical measurements of credit and economic developments have constantly become more refined, the author has generally sought to select those at the command of the administration which had to assume responsibility for the satisfactory solution of current difficulties. The reader will accordingly not be surprised when he notes, for instance, that in the discussion of the 1923 and 1924 periods, the B. L. S. price indices referred to are not those provided by the revision of 1927. Neither will he be puzzled because of the varying indices employed to depict variations from time to time in security price movements.

To be absolutely faithful, however, to the ideal of utilizing only current materials has been beyond the patience of the author. But he has tried to be fair in his choice of statistical measurements, and he hopes that

his efforts in this direction will be so regarded by such members of the system's administration as may read these pages.

HAROLD L. REED.

ITHACA, N. Y.
August, 1930.

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CHAPTER I

FEDERAL RESERVE POLICY FROM THE BUSINESS RECOVERY OF 1921 TO THE SPRING REACTION OF 1923[1]

I. THE SIGNIFICANCE OF THE YEARS FOLLOWING 1921 IN THE DEVELOPMENT OF FEDERAL RESERVE POLICY

By the title of his book published in 1925, Governor Harding characterizes the years preceding that date as the "formative" years in the growth of the federal reserve system.[2] Even had his book been written as early as 1921, there would have been on record a series of accomplishments and formulations of principles of policy which could be regarded as relatively permanent and final. It was in these earlier years that the larger part of the country's gold resources was brought within the coffers of the Reserve Banks; that the Reserve Banks became the holders of the entire legal reserves of member banks; that note-issue arrangements were greatly simplified and liberalized. By these and other means, the powers and resources of the Reserve Banks were considerably enlarged. In the field of policy, by means of generous eligibility rulings, it had been determined that the Reserve Banks were to be made as

[1] Adapted from Harold L. Reed's Recent Federal Reserve Policy, *The Journal of Political Economy*, vol. XXXVII, No. 3. Used by permission.

[2] HARDING, W. P. G., "The Formative Period of the Federal Reserve System," Boston, 1925.

serviceable as possible to country as well as to city banks; that exchange charges were not to be levied against Reserve Banks; and that no general lowering of membership requirements was to be recommended for the purpose of facilitating entrance into the system of those eligible state banks which had displayed no great zeal to join. Although debate continued, decisions in all these matters proved to be enduring with respect to the future functioning of the system. They have not been altered in recent years.

But, despite such accomplishments, federal reserve policy prior to 1921 had to be conceived with large regard for treasury requirements, and it was not until the effects of war (not treasury) finance had tended to disappear that the period significantly "formative" for peace-time operation could begin. As long as war-time necessities were operating little could be done to determine the place the Reserve Banks should occupy in the country's financial machinery and the relative importance in the future of their various powers. In 1921 it would have been indeed hazardous to predict whether the average member bank would be a continuous, or only an occasional, user of reserve credit and whether the Reserve Banks would customarily supply any large part of the country's credit accommodations and exchange media. In the regulation of discount advances, previous experience threw little light on whether the Reserve Banks would rely chiefly on rate changes, on the arbitrary decisions of management, on the condition of the applying bank, or on the character of the paper tendered. In the fixation of rates, discount procedure had developed no principles of permanent applicability. Whether rates, to be effective, must be above those borne by the great mass of member banks' customers' paper or only related to the rates banks earn by investing funds in the country's central

money markets was still a matter of conjecture. Nor had experience conclusively indicated whether rates should be uniform as between the different districts or whether they should vary according to the conditions of the locality wherein the applications originate. More generally, little could be safely ventured in reply to the pessimist's contention that the powers of the Reserve Banks were not sufficient to enable inflationary demands to be resisted on occasions of excessive business optimism.

Those who entertained pessimistic forebodings were furthermore concerned on account of the divergencies of opinion regarding the proper tests of the general credit policies of the Reserve Banks. Should, for instance, the Reserve Banks adapt their activities to the end of stabilizing commodity prices, of maximizing production, of facilitating the reestablishment of the gold standard throughout the world, or of protecting the reserve ratios? If the last-named objective should be accepted, what alterations should be made in methods of computing reserves in order that they might become more sensitive indicators of credit conditions? While there had been much anticipatory thinking on these matters, it had not yet been possible to subject the various theories to the test of experience or to foresee comprehensively and accurately the economic setting of the periods in which decisions must be made.

What technical methods, furthermore, were the Reserve Banks to develop to enforce their judgments with respect to the credit needs of the country? Were open-market dealings to occupy a purely subsidiary and accessory rôle in reserve policies, or were they to become major instruments, so that henceforth the real initiative of the Reserve Banks would be manifested by the volume of their purchases and sales, with discount rates and discount procedure adjusted thereto? If open-market activities were to become emphasized,

In view of this fairly steady reduction in member banks' commercial advances it might be expected that price liquidation and general industrial activity would have declined with similar regularity throughout the year. But the abrupt fall of commodity prices ceased about the middle of the year and the price level remained practically unchanged during the last six months of 1921. Thus the All Commodities Index of the Bureau of Labor fell from 177 in January to 148 in June. On December this price index stood at 149. Had the Board's Index of Production in Basic Industries then been available, it would have shown similarly that decline was arrested by the middle of the year. But unlike the price index in the second half of the year, the series which were later worked into the basic-production index advanced in such a way as to make up the losses of the first six months. As later computed, this index fell from 84 in January, 1921 (1919 = 100), to 77 in June. By December the production index had returned to 83.5. Three facts which the figures cited reveal require emphasis. First, member banks, by 1922, had experienced no increased strain on account of the demands of business for commercial loans. Second, the precipitous decline in prices had been at least temporarily suspended. Third, a marked recovery in the physical volume of basic production was taking place.

The developments of 1921 had increased markedly the ability of the Reserve Banks to supply enlarged credits. Throughout 1921 the total deposits of the Reserve Banks had remained fairly stationary. Federal reserve notes in circulation had declined, however, by more than a billion dollars.[1] At the same time, largely

[1] It would, of course, be expected that reserve balances would not fluctuate within so wide a range as reserve notes. Reserve balances constitute the legal reserves of member banks and comprise consequently only a fraction of the volume of member-bank deposit liabilities. A large expansion or contraction in member-bank credit may therefore take

as a consequence of gold imports, total reserves had increased approximately $75,000,000. The combined reserve ratio of the system thus advanced during the year from 45 per cent on Dec. 30, 1920, a figure not much above the legal minimum, to 71 per cent on Dec. 28, 1921.

Discount rates in effect Jan. 1, 1922, were 4.5 per cent at Boston, New York, and Philadelphia, 5.5 per cent at Minneapolis and Dallas, and 5 per cent at the remaining seven Reserve Banks.

III. THE RATE PROBLEM AT THE BEGINNING OF 1922

As long as rates are only infrequently changed, the announcement of new discount schedules must inevitably incite the most intense interest in federal reserve activities. Ordinarily, rate changes disclose administrative intent much more decisively than other measures. On the other hand, the purchases of government securities and the size of the securities portfolio vary from week to week, and it is sometimes difficult even for the expert to determine the significance of fluctuations in this item of earning assets. Although open-market holdings may have been moving consistently in one direction for a period of time, the process is usually slow and gradual and public attention is not so suddenly drawn to the operations of the Reserve Banks. The enactment of new rate schedules, however, signifies either that in the judgment of the reserve administration a new situation in the money market has developed or that the Reserve Banks are determined to employ vigorous efforts to create a change. Rate changes are of a positive and

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place without any very considerable alteration in the volume of reserve balances. On the other hand, the outstanding volume of federal reserve notes is more or less proportionately affected by the return of currency from circulation or by an enlarged demand for currency. The more variable item is the note account.

emphatic nature. They are deliberately decreed by administrative bodies and they are not nearly so likely as open-market operations to signify merely cautious experimentation.

For these reasons it might be expected that at the beginning of 1922 adequacy of the rate structure would assume prime importance in the deliberations of the district directorates and the Federal Reserve Board. But at that time it would seem that special factors also would magnify the emphasis upon the rate question. During 1921 reserve discount rates had been lowered frequently. To select New York as an illustration, the month of April found the 7 per cent maximum rate still in effect. Within a period of eight months, successive reductions had brought the rate down to 4.5 per cent. Further reductions could no longer be urged merely on the ground of correcting the "abnormally" high schedules of the crisis years. They must be justified with primary reference to credit and industrial requirements. Then, again, with rates at the "reasonable" figure of 4.5 per cent, future changes must go far to disclose the reserve administration's position regarding the place reserve rates should occupy in the money market. Further reductions would seem to indicate the final rejection of the contention that reserve rates should not be far below the rates member banks customarily obtain on ordinary customers' loans. They would seem rather to forecast that in the future reserve rates would be more closely tied up with the rates prevailing in the country's financial centers on operations in which banks located in all parts of the country regularly participate. Relating reserve discount rates to the lower "open-market" rates of New York City and other financial centers would appear in turn to necessitate, as a means of controlling the volume of reserve credit, a larger degree of reliance upon other measures, such as establishing basic borrowing lines,

scrutinizing with greater care the paper offered in applications, and, if necessary, direct refusals in doubtful cases.

With rate decisions of 1922 likely to have such far-reaching results, the Reserve Banks would undoubtedly have been relieved to find the balance of argument pointing decisively to one course or the other. But the task of the reserve administrative bodies at this time was not to be so easy. Some of the developments of 1921 seemed to point to the desirability of higher rates, while others indicated that advantages might be found in lower schedules. There was also much to support the contention that the need of changing rates in either direction was not yet clear and that decisions should be postponed until the business atmosphere had further cleared.

At this time one of the first elements in the problem to be considered was the effect of the rate reductions of 1921 upon the borrowing dispositions of member banks. The large and continuous use of reserve resources by a considerable number of banks was undoubtedly occasioning much apprehension. Thus, to quote from the report of the Federal Reserve Board for 1922:

> At the end of 1921, after liquidation had been under way for more than a year, there were still 906 member banks whose borrowings from the federal reserve banks were no less than three times as large as their normal basic line, that is to say, these banks were receiving at least three times as much accomodation as their pro-rata share of the lending power of the reserve banks. The total borrowings of these banks constituted 494 per cent of their basic line, while the total borrowings of all the member banks were only 40 per cent of their basic line.[1]

In other words, while reserve rates were low with respect to the rates which member banks were receiving on the great bulk of customers' loans, no precedent had then been frankly and generally accepted against the

[1] *Report of the Federal Reserve Board*, 1922, p. 3.

continuous use of reserve credit by member banks. Under these conditions reserve officials could not fail to be apprehensive as to whether further rate reductions would encourage the practice of employing reserve credit for profit-making purposes. In this matter it should be remembered that the greatest doubt then prevailed with respect to the ability of the Reserve Banks to employ effectively other means of restricting their credit offerings to member banks.

The before-stated perplexity developed out of the rediscount practices of a portion of the member banks. If, however, the events of 1921 were to be considered from the standpoint of the general course of reserve credit during 1921, it would not appear necessary to impose any further checks upon the volume of rediscounting. Despite the frequency of the rate reductions of 1921, the total volume of reserve credit had continued to decline. This is indicated by the figures of Table I.

TABLE I.—RESERVE BANK'S BILL HOLDINGS
(Thousands of dollars)

On last report date of 1921	Holdings of discounted bills	Holdings of purchased bills	Total bills[1]
January	2,457,116	165,058	2,622,174
February	2,389,510	170,503	2,560,013
March	2,233,106	123,156	2,356,162
April	2,076,568	103,609	2,180,177
May	1,907,913	87,138	1,995,051
June	1,751,350	31,601	1,782,951
July	1,641,612	19,424	1,661,036
August	1,491,935	35,320	1,527,255
September	1,413,013	38,889	1,451,902
October	1,313,027	62,316	1,375,343
November	1,182,301	72,954	1,255,255
December	1,144,346	114,240	1,258,586

[1] Alterations in the holdings of securities were not of sufficient dimensions in 1921 to account for the reduction in bills held.

This decline in the outstanding volume of reserve credit coincided, furthermore, with an unexpectedly large increase in reserve ratios and consequently in the lending powers of the Reserve Banks. Virtually without interruption the reserve ratio of the system had improved from 46 per cent on Jan. 7, 1921, to 73 per cent on Dec. 7. The year closed with the combined reserve ratio above 70 per cent.

But was this increase in the reserve ratio a consequence of an increase in the amount of the reserves of the Reserve Banks or of the decline in the liabilities requiring reserve? In the report of the Board for 1921,[1] figures are given which indicate that the principal cause of the improvement in the ratio was the increase in reserve holdings. If the amount of reserves had not changed from Nov. 5, 1920, to Dec. 28, 1921, the reserve ratio on the latter date would have been 51.6 per cent. If, on the other hand, the liabilities had remained constant at the November, 1920, figure, the reserve ratio would have been 59.3 per cent on Dec. 28, 1921. Since on this date the actual ratio was 71 per cent, the improvement of the reserve ratio must have been due much more largely to the increase in reserve money than to the decline in liabilities. In line with this reasoning, figures show that during 1921 cash reserves of the Reserve Banks increased about $750,000,000. This, in turn, was due in large part to the fact that 1921 brought to this country a net inflow of gold exceeding two-thirds of a billion dollars. At a time when member banks were extensively indebted to the Reserve Banks, imported gold was employed very largely to reduce member banks' indebtedness at the Reserve Banks, thus improving the reserve ratio by decreasing the liabilities requiring reserve and increasing the reserve holdings as well.

[1] *Op. cit.*, 1921, p. 29.

It could not be confidently anticipated, however, that gold imports would continue long in this large volume. It was highly doubtful whether there was enough free gold in the world to sustain such shipments to this country for any extended period of time. In view of the possibility that in the near future gold movements would be reversed, it might appear the part of wisdom for the Reserve Banks to husband the greater part of the incoming metal for such an emergency and not let it become immobilized in support of domestic credits.

Examination of the condition of the Reserve Banks would thus seem to lead to inconclusive results. Little could be said except that the volume of reserve credit had declined considerably during 1921, that reserve ratios had increased markedly, and that a rather large number of member banks were excessively indebted to the Reserve Banks. The first two of these facts would seem to support a move to lower discount rates, and the third, to increase rates. The reduction in the volume of reserve credit signified less, however, when attention was called to the huge volume of reserve credit in use at the beginning of the year; and reserve ratios also lost some weight as an argument for lower rates when their increase was traced in great part to the "freakish" gold imports. On the other hand, the excessive indebtedness of some member banks might be dealt with by subjecting their discount applications to special scrutiny. While it is probable that to many reserve officials the balance of the argument seemed to favor a program of lessening the cost of reserve credit, it must have been just as clear to others that there should be no further encouragement to member banks to employ reserve credit until the number of excessive borrowers had been reduced and the custom of making only occasional use of reserve credit had been more firmly established.[1]

[1] Here and elsewhere in this article it may appear that the writer is depending too largely upon conjecture in order to determine what was

The gold question could be further analyzed, however, and in such a way as to make recent developments in trade and production the ultimate and decisive considerations. If further gold imports were not to become the basis of an enlargement in the credit offerings of member banks, they must be employed solely to reduce member banks' indebtedness at the Reserve Banks. The sooner the Reserve Banks should thus lose money-market contact that much earlier would they be deprived of power to discourage the development of inflationary tendencies in business by the imposition of credit checks. With member banks out of debt to the Reserve Banks, further gold imports, if there should be any, must

going on in the minds of the various reserve officials; that grounds are shown upon which differences of opinion could have existed, without establishing that such differences did in fact exist. The writer should here state that he has followed the method of direct inquiry as far as seemed to him profitable. He believes that no conjectural cause of action is cited in this article which has not been acknowledged to him by at least one reserve official of influence. But to know how thoughts become translated into action is difficult, if not impossible, in a banking system with so complicated an administration as the federal reserve. At a meeting of, say, a district directorate, one man supports a certain move on one ground, another on another, and so on. Provided a majority of opinion exists as regards *what* should be done, it would be perhaps futile and possibly also undiplomatic to try to force a consensus of opinion as regards the dominant purpose. After such a meeting one official, when interviewed, will inform the investigator that the motive was this; another, that the motive was that; and so on. If it is borne in mind that there are in the reserve system 8 board members, 108 directors, 24 agents and governors, it ought to be evident that almost anything could be proved merely by citing opinions. For obvious reasons, moreover, many of the most valuable opinions must be kept confidential. All one can do is to proceed by the method of inference and seek to determine whether, in the absence of a certain viewpoint or doctrine which was enunciated by an influential person or faction, the activities of the Reserve Banks would have been what they were. Direct testimony of officials is necessary, but it is in very large degree of corroborative value only. In the following footnotes there will be a few citations of opinion to support the argument. But the writer desires it to be understood that such opinions, no matter how well conceived, cannot constitute the sole reliance of an interpreter.

increase the reserve balances of member banks and consequently provide them with the means of enlarging their own credit offerings to the business public by an amount manyfold that of the gold imports.

With this outcome in prospect, the question arose whether a somewhat more general use of reserve credit at that time might not be preferable to risking an uncontrollable expansion at a later date when a continued recovery of business might have developed overoptimism. Solution of this problem required careful analysis of industrial developments during the closing months of 1921. Judgments had to be formed whether further ease in the credit markets at that time would stimulate unhealthy tendencies in business.

To those reserve officials who posed the problem in this way, the evidence was less conflicting. It was of course true that the decline of commodity prices seemed to have been arrested by the middle of 1921 and that in the last half of the year a noticeable recovery of production had been manifested. On this account it might be felt that the revival had already developed sufficient momentum and that more liberal credit terms might lead to unhealthy tendencies.

But there would be much to offer against such a conclusion. It could not be contended that anything like complete recovery had been experienced from the disaster of 1920. Despite the caution which all agreed must be observed in utilizing the available statistical materials, much of which consisted of data collected for the first time, it was incontestable that employment was still far below normal and that the time when complete use would be made of the country's productive resources was quite remote. The recent crisis, moreover, had served to develop everywhere in business a spirit of caution and conservatism. These facts might well lead to the conclusion that it would

be difficult to find a period when credit expansion would be more likely to foster enlarged production and less likely to be associated merely with excessive price advances. The case for checking the rapid decline in the utilization by member banks of reserve credit was, therefore, strong.

A number of other considerations also could be offered in support of a lower rate policy. In the first place, with rates at a low point, more frequent increases could be decreed for the purpose of discouraging unsound use of reserve credit, if that policy should become necessary, than if rate increases had to begin at a higher point. In the second place, cheap money is always popular and would seem to connote recognition of the country's deflation difficulties. It will be remembered that the Joint Commission on Agricultural Inquiry had just completed its hearings and that public attention in many other ways had been drawn to the question of the powers of the Reserve Banks. Legislators were proposing bills providing that the assent of Congress should be required before reserve discount rates could be advanced beyond a certain level. If reserve rates were brought down to a low point, however, would not the clamor for this type of legislation wane? Finally, all foreign factors, at least those of current importance, called for as cheap money as could be consistently provided here. An easy money market would shift some of the strain of international trade financing from foreign central banks, would render easier the flotation of foreign "reconstruction" securities here, and would aid New York to retain its newly gained position as a world banking center.

By such arguments as these the case for still lower rates could be strongly put. Opposing conclusions had to be based largely upon the contention that it would be undesirable to increase the differential between

reserve and market rates. But the practicability of wide differentials was especially open to question in a country where regional differences in money rates are so pronounced, and it began to appear that, if necessary, other controls of rediscounting must be more extensively relied upon. By means of establishing basic borrowing lines for individual member banks, by encouraging the thought that it is not "proper" to be indebted to the Reserve Banks continuously, by advice, counsel, and even direct refusals, offset might be found against excessive rediscounting if rate measures alone should prove ineffective.

With competent analytical support available, and subject to the influence of future tendencies in business, the various rate-fixing bodies in the reserve system probably became increasingly receptive during 1922 to the idea that further reductions in rates should be decreed. We must now undertake a brief review of economic developments during the year 1922, for the purpose of ascertaining their influence upon reserve credit policy.

IV. INDUSTRIAL AND CREDIT DEVELOPMENTS DURING 1922

From an industrial point of view, rapid recovery continued throughout 1922 with virtually only one serious interruption, that occurring in the second quarter of the year. As previously noted, the Board's seasonally adjusted index, which measured changes in the output of 22 basic commodities, began its upswing in the summer of 1921, at which time production was below 75 per cent of the 1919 level.[1] By Jan. 1, 1922, this index

[1] The Board's Index of Basic Production here referred to was not completed until the close of 1922. A large part of the materials therein utilized was, however, available much earlier. See testimony on this point of A. C. Miller, when interrogated by John R. Commons before the House Committee on Banking and Currency on May 16, 1928. This

had arrived at 87. By September it had passed 100, the 1919 average, and at the close of 1922 it had reached 116. Here was a year's gain of 29 points, or 33 per cent.

No doubt this index exaggerates the improvement in trade in the aggregate. Recent statistical work, to which Carl Snyder has made great contributions, indicates that general trade undergoes no such variations as production in basic industries. The more sensitive basic production index is here employed merely to indicate the amazing speed with which in 1922 the abnormally low level of production of 1921 was overcome.

In determining the healthiness of such an improvement, one of the most pertinent considerations is the change effected in stocks of basic materials. Usually, after a depression, recovery begins with low stocks. Most cycle theories argue that the wearing down of excessive stocks in depression is one of the most important processes by which the economic stage is set for revival. During the early stages of recovery no great alarm need be felt if inventories increase somewhat sharply above the low depths of depression. But if the figures should show that enhanced production was going in very large degree into stocks, there would be occasion for real alarm regarding the ability of business to continue its recovery. It might be surmised that enterprise was developing an excess of optimistic error or that price movements and cheap credit were such as to render commodity speculation profitable.

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testimony is reproduced in *Stabilization Hearings* of 1928. *Cf.*, for instance p. 275.

These index numbers are here cited to avoid the necessity of presenting evidence of a larger number of separate series. Other index numbers could be cited, but it was felt that in interpreting federal reserve policy materials available to the federal reserve administration should be given the preference.

Figures published in the March, 1923, *Bulletin*, which had been currently available in 1922, showed, however, that the year had brought about no general increases in stocks of basic materials. A considerable amount of other evidence also indicated that there was no marked tendency anywhere in the channels of trade for goods to accumulate excessively.

To permit this increased distribution to consumers, money incomes are necessary. Of the many sources of our income streams, employers' pay rolls are very significant. Wage incomes diminish sharply in depression, and in recovery they must be regularly increased if consumers' buying power is to be sustained. The evidence at hand did indicate the regular distribution of more wage income. While the Board had not yet developed its employment index, we read such statements as the following in the pages of the *Bulletin:*

> Industrial concerns in all parts of the United States reported further increases in numbers of employees during November (1922). The United States Employment Service reports that 1,428 firms added 44,653 employees in November as compared to an increase of 52,867 employees in October. In the three-month period ending November 30 these concerns increased their forces by 126,188, or about 8 per cent.[1]
>
> Employment at industrial establishments continued to increase during December for the eighth consecutive month. The Bureau of Labor Statistics reports that 3,294 establishments located in all parts of the United States employed 1,587,708 workers in December, which was 2.4 per cent more than in November.[2]

It has already been suggested that another important circumstance bearing upon the probable permanency of the recovery was the movement of commodity prices. Generally speaking, greater confidence could be reposed in the permanency of the recovery if it appeared not to have been stimulated by rapidly rising prices. We

[1] *Federal Reserve Bulletin,* January, 1923, p. 17.

[2] *Ibid.,* February, 1923, p. 156.

should therefore expect the federal reserve authorities to have been highly attentive to the year's movements of commodity prices.

If price movements during 1922 were to be expressed by the Bureau of Labor's revised All Commodities Index Number, we should have the following figures:[1]

January	138
February	141
March	142
April	143
May	148
June	150
July	155
August	155
September	153
October	154
November	156
December	156

From January until July this index increased steadily, by a total of 17 points.[2] During the last half of the year the upward movement was not pronounced.

The steady advance in the first six months occasioned much criticism of the liberal credit policies of the Reserve Banks and undoubtedly developed much apprehension on the part of the reserve authorities. Many fears were expressed that we were entering upon a new era of price inflation and that the price advance was stimulating, in an unhealthy manner, the improvement in production.

Those who supported the rate decreases of the Reserve Banks offered a variety of arguments to refute these predictions of inflation. Some insisted that the advance

[1] These figures represent the results of the rather extensive revision effected by the Bureau of Labor in June, 1922 As in the case of the earlier figures quoted on p. 6 however, the base year remains 1913.

[2] Since the revised index of the Bureau of Labor was not available until July, 1922, the writer would have liked to employ the old series. Publication of the old series was suspended, however, with the April, 1922, figures.

was establishing a sounder relationship between the depressed prices of agricultural products and other prices. The Bureau of Labor's figures showed, however, a fairly parallel movement in the prices of agricultural and non-agricultural commodities. By more complete analyses, the attempt was also frequently made to show that the relationships between different groups of prices had improved. Finally, the price advance of early 1922 was interpreted as a healthy reaction from the low points reached in 1920 and 1921.

The most convincing reply, however, to those who predicted inflation and prophesied a sudden reversal of the improvement, was provided by a comparison of the relative movements of commodity prices, basic production, and member-bank credit. As previously indicated, the price advance was not nearly so marked as the gain in basic production. On the other hand, in spite of the price advance, the volume of member-bank credit was not increasing markedly.[1] There was every indication that bank credit was being productively employed and that goods were being prepared for the consumer at least as rapidly as his money income was expanding. In a period of rapid revival, much of the activity in basic industries was forward looking. Some time would be required for the full force of the increased outputs to be manifested in the direction of increasing the flow of goods to the wholesale markets, where, the prices of the Bureau of Labor's index were obtained. But when the full stream of finished goods should thus report itself, it would be expected that price advances would be more difficult to sustain.

In line with this explanation, wholesale prices, as has been indicated, ceased their abrupt increase in the last half of 1922. But instead of interpreting this stabilizing of prices in terms of the consequences of the

[1] *Cf. infra.*, Table II, p. 23.

previous increase in production, there has been a disposition in many quarters to ascribe it to credit checks imposed by the Reserve Banks. The fact that all rate changes of the Reserve Banks during 1922 were reductions rather than increases and that open-market adjustments by the Reserve Banks were only moderate did not apparently create serious embarrassment to those who insisted upon finding a purely monetary explanation for the price stability of the last six months.

Such interpretations would of course be expected. Until recent years there have been available only the most inadequate statistics bearing upon production, trade, pay rolls, employment, and inventories. On the other hand, index numbers of commodity prices and figures of the volume of money and credit were at hand for everybody's use. It was inevitable that wherever possible statistical correlations between fluctuations in credit and prices would be attempted to establish causal relationships and that discrepancies would either be slurred over or rationalized by intricate and perhaps startling methods of statistical technique. Since, moreover, the object of much of this research has been to devise means of stabilizing the purchasing power of the dollar, investigators were continuously tempted to emphasize the rôle of bank credit in analyses of the movements of general prices. Bank credit being regarded as subject to a higher degree of control than most of the other important price-determining agencies, it was deemed necessary to establish the causal influence of credit factors upon prices.

Conclusions thus arrived at are rendered plausible by the fact that under certain conditions of industrial activity credit may be the controlling factor in price movements. Under conditions of supernormal industrial activity, complete labor employment, and scarce raw materials, abundant credit may encourage rival

entrepreneurs to bid against each other, with the result of increasing costs, and consequently—or previously, by way of anticipation—general prices. Such situations encourage analysts to emphasize the impulses to price changes rather than the characteristics of the industry on which these impulses impinge.

During the recovery stages of 1922, however, the appropriate conditions for continuous inflation had not yet developed. As previously argued, production had not yet manifested itself completely in the guise of enlarging the supply of final commodities. There was good ground for believing that the wholesale price advance of early 1922 would be checked when the flow of goods to the market increased. There was also ground for predicting that before recovery had proceeded farther it would be unwise to impose upon business the psychologically depressing restraints of more costly credit. At least until the summer of 1922 the industrial recovery was something to be encouraged rather than discouraged. This conviction was further fortified by noting the handicaps created by the railroad and the coal strikes and by observing the general spirit of caution permeating the business community. Mindful of the losses of 1920, business was unwilling to engage in extensive commodity speculation or to accumulate extra-large inventories.

By analyzing industrial conditions it was thus possible to find much support for a policy of continued liberality in the offering of Reserve Bank credit. The movement of member-bank credit, it may now be observed, also supplied little comfort to those who argued that the price advance of the first half of the year was attributable to easy credit and that the checking of the price advance in the last half of the year was due to the imposition of credit checks. This is apparent in the figures of Table II, which applies to the reporting member banks.

TABLE II.—LOANS AND INVESTMENTS OF REPORTING MEMBER BANKS
(Millions of dollars)

	Dec. 21, 1921	Mar. 8, 1922	July 26, 1922	Dec. 27, 1922
Loans and discounts	11,289	10,896	10,739	11,329
Investments	3,573	3,631	4,450	4,823
Total loans and investments	14,862	14,527	15,189	16,152

It is no doubt true that the credit that is used to complete transactions is not fully called forth at the time transactions are entered into. On this account the tendency for the volume of credit to grow more rapidly in the second half of the year might be partially explained. But the figures certainly do not support the assertion that credit manipulations and credit policies were the prime, initiating agents of the price movements of wholesale commodities in 1922. A more restrictive credit policy might have resulted merely in lesser industrial activity with prices at levels not far removed from where they finally lodged. Fewer goods on the market and smaller incomes to buy these goods might then have been the story of this period.

V. FEDERAL RESERVE ACTIVITIES DURING 1922

The rôle played by the Reserve Banks during 1922 in supplying member banks with credit may be statistically summarized by the figures in Table III, which show holdings of various classes of paper on dates near month ends.

These figures have been variously interpreted. A first explanation emphasizes the component items of the Reserve Banks' portfolios rather than the movement of total earning assets. It is contended that at the beginning of 1922 the Reserve Banks were dissatisfied on account of their limited holdings of that class of

TABLE III.—RESERVE BANKS' HOLDINGS OF BILLS AND SECURITIES ON MONTH ENDS

(Millions of dollars)

Date	Dis-counted bills	Bills bought in the open market	Total bills on hand	U. S. securities	Total earning assets[1]
1921:					
Dec. 31. ..	1,144	145	1,289	233	1,523
1922:					
Jan 31. . . .	838	74	913	293	1,207
Feb. 28 . . .	712	93	806	407	1,214
Mar. 31 . ..	680	105	785	455	1,241
Apr. 29 . . .	510	90	600	587	1,187
May 31	471	118	589	603	1,193
June 30	461	161	622	555	1,177
July 31.	406	140	546	536	1,082
Aug. 31.	397	180	577	507	1,084
Sept. 30	463	244	708	482	1,190
Oct. 31........	576	258	834	362	1,197
Nov. 29......	650	259	909	304	1,213
Dec. 30.......	617	272	889	436	1,326

[1] Includes municipal warrants.

open-market paper—government securities—which, to a greater extent than bills, might be employed with reference to their own, rather than member banks', initiative. Since security holdings were rather limited at the close of 1921, the increased purchases of securities in the first half of 1922 are said to reflect primarily the desires of the Reserve Banks to strengthen their power to take aggressive steps in the money market in the future.

It would be admitted that the enlargement of security purchases might keep outstanding a somewhat larger supply of reserve credit than would otherwise come into existence. But, according to the interpretation under examination at this point, the resulting changes in the total volume of reserve credit did not indicate the primary

purpose of the reserve administration. What entered most largely into the calculations of the Reserve Banks was the question of the desirable volume of security holdings. In other words, it is here held that the results aimed at were rather of a qualitative than of a quantitative character. It was not so much a matter of the gross aggregate of bills and securities as of their type.

A second explanation contends that, throughout the early part of 1922, the Reserve Banks were principally concerned by their weakening contact with the money market and employed every means within their powers, of which the security operations were but one, to neutralize the influence of the continued gold imports upon the demand for reserve credit. As rediscount demand declined, the Reserve Banks, so it is held, endeavored to offset this tendency by increasing their purchases of securities. In this way holdings of securities became larger relatively to holdings of bills. But this increase in the ratio of securities to bills, it is asserted, was not a primary concern of the Reserve Banks. On the contrary, it is argued that the increase in security holdings was only an incident in the process of encouraging a large use of reserve credit.

A third interpretation asserts that in this period there was no dominating purpose in the system and that the figures which have been cited with respect to the 1922 operations represent simply the net results of the activities of the individual Reserve Banks, each of which, motivated perhaps by its desire to "earn," was independently steering its own course of action. This contention is supported by references to opposing statements of various reserve officials, by statistical summaries which seem to display divergencies in the activities of the district Reserve Banks, and by allusions to the fact that not until 1923 had the open-market committee, composed of the governors of several Reserve

Banks, been developed in a form capable of coordinating closely the purchasing activities of the different Reserve Banks.

With respect to the validity of this last view, much depends upon what we mean by a "unified policy." If this phrase must imply either that there was a close agreement between the most influential reserve administrators or that some faction in the reserve system consistently dominated other factions, we are likely to be disappointed in our search for a "central aim." We shall probably be similarly balked if we assume that proponents of the same activities must arrive at identical conclusions by similar processes of thought. In this period we may even be unable to find any preponderating sentiment with respect to the system's primary responsibility. In a body so organized and administered as the reserve system we can perhaps accomplish no more than to discover the predominant opinion or that opinion which gained full-hearted support from a powerful faction whose members may have been first influenced by the more superficial necessities of the situation. Or, on the other hand, explanation might be sought in the discovery of the doctrine which did most to remove the antagonisms between the practical judgments of the most influential reserve administrators.

With "policy" broadly defined, it may be possible to harmonize the two interpretations, one of which emphasized the desirability of building up a portfolio of securities and the other that the loss of money-market contact should be resisted by whatever means were available. In the last analysis, they may be reduced to much the same thing and may be made to rest upon similar economic premises.

The policy of enlarging the securities portfolio appears to have had an end of its own. The time might come, if gold imports continued, when inflationary tendencies

in prices, or other unsound developments in business, might be manifested. For such an occasion it would be most fortunate if the Reserve Banks were provided with the means of curtailing the supply of reserve credit with promptitude and efficacy. Rediscount measures, including the increase of rates, might not alone be sufficient to yield the desired results. The Reserve Banks, in contemplation of the needs of meritorious borrowers, might be led to give excessive consideration to other demands. General opinion of a highly optimistic character might resist severe rediscount checks. Furthermore, increased rates might not operate soon enough. The market might not be seriously affected until an appreciable quantity of old bills had matured. On the other hand, the sales of securities would provide the Reserve Banks with the means of promptly compelling member banks to choose between increasing their borrowings suddenly and considerably and contracting their own credit offerings.

But what would be the immediate effect of increasing holdings of securities? Would the enhanced portfolio of securities be at the expense of holdings of rediscounted bills and acceptances, or would it mean an enlargement of the total earning assets of the Reserve Banks?

Although experience in this matter was somewhat lacking at this time, it must have been reasonably apparent to most reserve officials that the securities portfolio could be built up only at the cost of some diminution in the rediscount demand. Some of the banks immediately provided with funds by the Reserve Banks' purchases might be indebted to the Reserve Banks and employ their enlarged balances to cut down reserve indebtedness instead of expanding their loan or securities operations. Even if these banks were not heavy rediscounters, the funds which they in turn would

release would in the course of time be apt to reach some other banks which were indebted to the Reserve Banks. The extent to which security purchases by the Reserve Banks would cut into rediscounts must depend upon a number of considerations bearing upon the economic and financial situation. But, in early 1922, with a number of member banks extensively in debt to the Reserve Banks, the scissors action of securities and bills must have been prompt and considerable. It is not surprising that, in 1922, holdings of discounted bills soon came to be exceeded by holdings of securities, with certain resulting embarrassments.

These embarrassments were manifested by numerous complaints that the Reserve Banks were becoming too vigorous competitors of member banks and that the institutions which supply the capital of the Reserve Banks were being deprived of earnings because of the depressed money rates which the Reserve Banks had helped to generate. By resolutions at various bankers' conventions and otherwise the member banks began to demand that the Reserve Banks operate less extensively on their own initiative. Later it was insisted in some of these pronouncements that the Reserve Banks should return to their "original" functions of rediscount and issue and that they should operate more as emergency, panic-allaying institutions.

Particularly in a banking system wherein control is as diffused as in the reserve system, complaints of this sort are likely to be highly effective, and it would seem the part of wisdom to avoid them as far as possible. Along with the growth of security holdings, attempts must therefore be made to stimulate rediscounting. It must be made to appear that it is the demands of member banks, as well as the initiative of the Reserve Banks, which are responsible for the volume of reserve credit outstanding.

Assuming, then, that the dominant purpose was to acquire a portfolio of securities, it would therefore not be surprising to learn that all rate changes effected throughout 1922 were reductions rather than increases. Thus the Dallas rate was lowered from 5.5 to 5 per cent on Jan. 9. January 11 the same change was made in Minneapolis. January 23 the 4.5 per cent rate was approved for San Francisco; and on Feb. 14, Mar. 15, Mar. 25, Apr. 6, and Apr. 14 the 4.5 per cent rate was set up in Cleveland, Atlanta, Chicago, St. Louis, and Richmond, respectively. On June 22, June 23, and July 8 the 4.5 per cent rate was lowered to 4 per cent in Boston, New York, and San Francisco. On July 12, Aug. 12, and Aug. 15, the 5 per cent rates of Minneapolis, Kansas City, and Dallas, respectively, were reduced to 4.5 per cent. By the middle of August the 4 per cent rate prevailed in three districts, the 4.5 per cent in the other nine. After Aug. 15 no rate changes were made.

The continued acquisition of government securities, if this were the prime intention, would thus be expected to end in the adoption of devices to encourage rediscounting. In this way the adherents of a larger portfolio may have come into accord with the views of those whose main concern was to stimulate the wider use of reserve credit.

Already in this discussion several references have been made to the extent to which on account of gold shipments the demand for reserve credit was being reduced. During 1921 the reduction in the volume of reserve credit was about equal to the total amount outstanding at the beginning of 1922. The possibility of a continuation of this process must have aroused many apprehensions in the minds of reserve administrators. With the volume of reserve credit insignificant, the Reserve Banks would be in no position in the future to restrain the inflationary use of further gold imports, assuming that

these should continue. Those motivated by this thought would of course advocate a reduction in rediscount rates. Reductions in rates, however, might not incite rediscount demand sufficiently, and, furthermore, there were limits to the extent to which rediscounting could be encouraged save by abandoning the growing convention that it is illegitimate to borrow continuously from reserve institutions. In such a situation resort would have to be had to increasing open-market purchases of securities. Considerations related primarily to the total outstanding volume of reserve credit would thus lead to activities substantially similar to those which would have followed from a program merely of increasing the securities portfolio.

However this may be, those who welcomed a large portfolio of securities would have the same responsibility as those who emphasized the need of maintaining market contact, namely, that of defending from the point of view of economic requirements the outstanding volume of reserve credit. It has been pointed out previously that many found only occasion for alarm in the movement of commodity prices during the first half of 1922. Continuous predictions were made that this country was entering upon a new era of price inflation. Calling to mind the fact that the reserve system had not yet demonstrated its ability to discourage effectively the undue use of its resources on occasions of a business boom, it would be expected that the price movement would create great nervousness in all reserve circles. Clearly, the inflationary contention must be answered or the reserve policy of 1922 altered sooner than it was. What type of analysis, it may now be asked, could have served to overcome the bogy of inflation? In our opinion the answer to this question brings us as close as is possible to stating the most significant aspect of reserve policy in this period.

To combat the predictions of a continued advance in prices until the *débâcle* of 1920 was repeated, only one authoritative doctrine was at this time available. As is indicated in the previous section of this chapter, the analysis of production and trade indices did not lend much support to the "inflation" critics of reserve policy. During that part of 1922 in which the price advance was being registered, namely, the first six months, the volume of basic production was increasing tremendously.[1] Must not the subsequent appearance of the enlarged flow of goods on the wholesale markets offset the tendency of wholesale prices to rise? In a period in which there was also little evidence of the accumulation of excessive stocks, would it not be a mistake for the Reserve Banks to impose credit checks and run the risk of interrupting the general recovery of industry? In view of the fact that the peak of the postwar inflation was only a little more than two years removed, we are forced to conclude that the calmness of the reserve administration and its refusal to become prematurely alarmed at the prospects of another price upheaval are to be attributed mainly to the facilities which were provided by the system's research organizations for determining how productively credit was being employed.[2]

[1] The fact that the increase in basic production was greater in the second half of 1922 than in the first half need not disturb this argument. The essential point is that production was increasing markedly during the period (first six months of 1922) of rising commodity prices. If later on (the second half of 1922), while price movements were relatively insignificant, basic production was to increase still more sharply and reach a point close to maximum possibilities, it would not be price movements so much as other factors which would create anxieties for the reserve administration. Here we are concerned with price derangements.

[2] In view of the fact that testimony and speeches of various reserve officials have often been quoted (with frequent failures to observe qualifications and attendant circumstances) to afford direct evidence in support of other conclusions, attention may properly be called to the remarks of A. C. Miller, May 16, 1928, when questioned by John R.

It is of course to be admitted that the attempt to analyze production indices according to methods outlined in the annual report of the Board for 1923 involves processes of thought with which a large majority of reserve officials may have been unfamiliar. Undoubtedly many reserve administrators were motivated principally by the desire to maintain the earning assets of the Reserve Banks at a sufficiently high figure to guarantee dividend payments out of current earnings. But we cannot believe that the earnings temptation alone explains reserve policy in this period. Some competent assembling and interpretation of statistical material were required to combat the criticisms of those who foretold continued price inflation.

In this period also international considerations may have had some degree of influence. But our inquiries do not indicate that at this time there was a highly developed consciousness of the ways in which reserve policies might be adapted to the end of facilitating currency reconstruction abroad. The problems purely of domestic finance were then too "awesome" to leave much appetite for the contemplation of foreign financial relationships. In later years European credit and currency needs undoubtedly came to play a large part in reserve policies. In 1922 they do not appear to have been dominant.

Commons before the House Committee on Banking and Currency. Mr. Miller stated: "Well, I should say that, taking the period as a whole [1922 and 1923], the Federal Reserve did not undertake to check that rise in prices, on the theory that that rise in prices was due to certain economic factors that inevitably would and should be permitted to work out their effects in price changes. We were emerging from a period of acute depression. Business was at a low ebb. Goods were in short supply, and a rise of prices as interpreted by the Reserve Banks would be the signal that the consumer was beginning to show a disposition to consume, and we had concurrently an upward movement of prices and an upward movement of production and trade." See *Stabilization Hearings* of 1928, p. 293.

VI. THE IMPOSITION OF MILD CREDIT RESTRAINTS IN EARLY 1923

With only one exception, the Reserve Banks' holdings of government securities were reduced month by month in 1922, after the high point had been reached in May. No further rate reductions, moreover, were decreed after the middle of August. It would therefore appear that in the closing months of 1922 the opinion prevailed that the volume of reserve credit in use should be somewhat restricted. But, during 1922, the restraining intentions of the Reserve Banks were not revealed with clearness and certainty.

In the early part of 1923, however, the sentiment favoring mild credit checks was manifested in unmistakable terms. Turning our attention first to the securities portfolio, we find that in the three months extending from Jan. 31 to Apr. 30 the securities holdings were reduced almost 50 per cent. This appears from the figures of the next to the last column of Table IV.

TABLE IV.—RESERVE BANKS' HOLDINGS OF BILLS AND SECURITIES ON MONTH ENDS
(Millions of dollars)

Date	Discounted bills	Bills bought in the open market	Total bills on hand	U. S. securities	Total earning assets
1923:					
Jan. 31	597	188	785	353	1,139
Feb. 28	595	207	803	363	1,166
Mar. 31	698	263	962	250	1,212
Apr. 30	724	271	996	185	1,181

It might be argued that the decline in government securities indicates merely that member banks were obtaining reserve credit more largely by a different process; that, in other words, declining purchases of securities were offset by increasing rediscounting. In support of this

contention allusion could be made to the fact that holdings of discounted bills grew month by month and that the total volume of reserve credit remained at a fairly uniform figure. But no measures were adopted in these months to encourage rediscounting. Indeed, contrary action was taken. On Feb. 23 and Mar. 6, rate increases were inaugurated at three Reserve Banks. Boston, New York, and San Francisco advanced their discount rates from 4 to 4.5 per cent, thus establishing for all banks a uniform rate.

It would not therefore appear that these rate increases could be interpreted to signify other than the intention to restrict the outstanding volume of reserve credit. It is true that some have attempted to minimize the significance of the rate increases by noting that they were confined to three banks. In support of their position they quote from the Board's report for 1923 as follows:

> At the time there had been a considerable increase on a national scale in the demand for credit and the existing inequality between discount rates in various districts tended to attract an undue proportion of borrowing to the centers of low rates. The effect of the rate advances of the three banks was to bring about a better regional distribution of credit and to test the character and soundness of the credit demand by having the obligations of borrowers passed upon by banks in their own locality.[1]

We are inclined to believe, however, that this explanation tends to detract somewhat from the real importance of these rate increases. As noted in the report, they were the first that had been enacted in more than two years. They were also virtually the first in the whole history of the reserve system which ignored considerations of the sufficiency of reserve ratios. Their enactment, furthermore, coincided with a reduction in securities purchased and a slight decline in total earning assets. They

[1] *Report of the Federal Reserve Board*, 1923, p. 4.

applied, moreover, to banks possessed of almost one-half the resources of the entire reserve system.

Nevertheless, the mildness of these restraining measures is indicated by the fact that they were not sufficient to prevent member-bank credit from pursuing a somewhat opposite course. Thus loans and discounts of all member banks increased almost half a billion dollars between Dec. 29, 1922, and Apr. 3, 1923, despite the fact that in these months seasonal influences ordinarily operate to lessen the demands upon the banks. Security holdings of member banks in this time advanced slightly.

The divergent movement between reserve and member-bank credit appears to have been due principally to continued gold imports. Thus the net gold inflow was:

1923	Millions of dollars
January	24 3
February	6.9
March	5.9
April	8.5

If, then, it is reasonable to hold that in these months mild measures of restraint were purposely imposed upon member banks, we may inquire into the factors in the general situation which were primarily responsible. Herein, three possibilities deserve brief consideration. In the first place, there is the contention that in this period the Reserve Banks were merely following the course of the money market. To support this view, various charts have been constructed showing that discount rates of the New York Reserve Bank were usually between the open-market rates on prime commercial paper and the yield on Treasury certificates or banker's acceptances; that when these rates rose the reserve rates were correspondingly adjusted. Those who interpret developments in this light assert that reserve

policy has found in this country, in the same way as with central banks abroad, an automatic basis of procedure and that the pronouncements of the district banks and the Board, relative to trade conditions, represent rather the work of those who prepare the publications of the reserve system than of those who actually determine reserve policies. Some adherents of this opinion further assert that the New York Reserve Bank's rates are thus fixed with reference to the money market of that city and that for the other Reserve Banks the procedure usually is to act in unison with New York.

If rediscounting represented the sole means of granting reserve credit, it might be somewhat difficult to refute this interpretation. It may be that a rediscount rate, interposed between such rates as bank acceptance or Treasury yields on the one hand and open-market commercial paper on the other, operates as effectively as any rate could to sustain the proper volume of rediscounting. It can be argued with a great deal of plausibility that higher discount rates would increase the cost of reserve bank credit unnecessarily and that lower rates would make it diffiuclt to prevent general resort to the Reserve Banks for profit-making purposes. But what forces, it may be asked, determine the height of these other rates, between which reserve rates are said to be interposed? No one would deny that, with certain limitations, rates in the money market are affected by the volume of the Reserve Banks' purchases and sales of government securities. Reserve policy cannot therefore be defended merely by noting the relationship of reserve discount rates to those prevailing in the money market. It is necessary also to inquire whether by purchases and sales of securities the money market has been influenced in the right direction and to the right degree. This involves considerations which are by no

means capable of summarization in simple rules of thumb.

A second explanation of reserve policy in this period finds the key in the course of commodity prices. Those of this view inform us that reserve officials were seriously alarmed by the tendency of wholesale prices to rise in the first half of 1922 and that accordingly attempts were shortly made to lessen the supply of the circulating medium by withdrawing funds from the market. This withdrawal, so runs the argument, checked immediately the tendency of money rates to fall and later even encouraged their ascent. In this way the money market, so it is asserted, was "prepared" for the rate increases of 1923. In other words, price stability was the goal sought, but for policy reasons the Reserve Banks found it desirable in their rate schedules to follow the market. Although the rate increases were not enacted until the spring of 1923, they are held to represent the culmination of a general policy which began in the latter part of 1922 to correct the tendencies of the first half of 1922. In this way it is intimated that the restrictive measures of 1923 were necessitated mainly by the price movements of a year before. The tendency of prices to advance in the spring of 1923 was not sufficiently pronounced[1] to provide, of itself, the explanation of the first rate increases since 1920 and the first serious use of security sales for the purpose of restraint. A connection is

[1] It is even doubtful whether on Feb. 23, the date of the discount rate increases of the Boston and the New York Banks, the reserve authorities were aware of *any* tendency of the price averages to advance. The All Commodities Index of the Bureau of Labor had been as follows:

October, 1922	154
November, 1922	156
December, 1922	156
January, 1923	156

The February figures were not then available, and when they did appear they showed only a one-point rise, to 157.

asserted, therefore, between the price advance of early 1922 and the rate increases of early 1923.[1]

For this interpretation we find little justification, and we cannot avoid registering the opinion that this doctrine owes its origin to the efforts of stable money doctrinaires to find a recent illustration of the obedience of prices to credit manipulations. While we do believe that reserve authorities would have employed every weapon to check an extreme derangement of prices, it appears to us that emphasis upon such price movements as were recorded would have led to the adoption of restrictive measures a year earlier. On the other hand, it is easy to harmonize reserve activities with the doctrine that in trade and production indices, in employment and inventory figures, just as definite clues to action were had as in the movement of commodity prices.

Not until the early fall of 1922 had the basic production index reached the 1919 level, and it must be remembered that "normal" production for 1922 would be expected to be somewhat above that of 1919. The principal worry in early 1922 was whether the industrial recovery would prove permanent. In so far as mild price improvement would encourage the recovery, it would appear to be a welcome, rather than an unwelcome, manifestation. Much difference of opinion must have prevailed as to whether an increase in the first half of 1922 of 17 points in the Bureau of Labor Index constituted only a mild improvement. But it must be remembered that such price liquidation as was begun in

[1] Some adherents of the price stability interpretation endeavor to explain this "timing" difficulty by asserting that it was not until the spring of 1923 that the Reserve Banks "discovered" their power. Such an explanation must admit that prices righted themselves in the latter part of 1922 without the adoption by the Reserve Banks of measures of restraint. On this account it is a little difficult to understand how these adolescent Reserve Bank institutions awakened just a little later to complete realization that an advance of prices, of lesser dimensions than that of 1922, required on its account alone corrective action.

1920 must overdo itself. If we are to have such crises as those of 1920, with their serious impairments of economic activity, we cannot expect recovery in production without recovery in prices as well. When the recovery begins, money with which to buy goods is diffused in advance of the flow of goods into consumption channels. When production, however, has had time to push the new output into the market, it is difficult to sustain price advances except by absorbing the new production in inventories.[1] The essential thing to observe in 1922 was accordingly the use made of the outstanding volume of bank credit by trade and industry.

It is of course difficult to uncover the secret and hidden motives of our banking administrators. But in official publications the scientific basis of correlating

[1] Because of this point many intelligent price stabilizationists fail to find any conflict between their doctrine and those which have been developed from the analysis of trade and production indices. If insistence upon the productive use of credit will prevent extreme fluctuations in price levels, they would argue that the question becomes one merely of the proper choice of indices. If this is understood on all sides much of the controversy disappears. If the price stabilizationists will further admit that occasions may arise in which moderate price changes are not always unhealthy manifestations and do not necessarily indicate so clearly as perhaps other factors either credit pressure or credit ease, the author would have less quarrel with them. The author would also want it understood, before he will concede that there is no conflict in view, that a vast distinction is to be made between moderate and extreme price derangements. There is little question but that extreme price derangements usually tell the story conclusively. Almost always, however, other derangements would have told the story earlier. Furthermore, moderate price alterations may record the effects of other factors in the situation than the supply of credit, and universally to employ credit manipulations as a counteracting force might do more harm than good, assuming that the test is the effect upon the aggregate volume of production rather than stability in the standard of deferred payments. While many price stabilizationists admit these points in their discussions, they forget them in their applications. The probability, nay, the certainty, that the public would do this provides the real case against the program to amend the reserve act along lines suggested in various drafts of the Strong bill.

production and credit movements was laid. The interpretation of this emphasis correlates in turn much more perfectly with the activities of the Reserve Banks than does the price stability interpretation.

The third explanation, and that here accepted, is that reserve policy in this period was, in its larger aspects, shaped with primary reference to the interrelationships of production, trade, and the volume of credit. In the first quarter of 1923 the industrial boom continued. At the end of this quarter the seasonally corrected index of production in basic industries had risen to a level 8 per cent higher than the 1920 peak and 69 per cent above the 1921 low.[1] *In spite of this huge output,* the level of wholesale prices underwent a mild increase. But this price advance did not seem to be encouraging commodity speculation. Inventories were not developing to an excessive extent, and wholesale as well as retail distribution continued at a high level. Nevertheless, there was much ground for believing that outputs had about reached the limit of the country's industrial capacity. Production simply could not long continue its past rate of improvement. If a reaction must develop sometime, it would seem preferable to impose credit checks before extremely unhealthy tendencies developed. It would thus appear that the impossibility of employing more credit productively, rather than the mild price advance, explains the restrictive measures of the spring of 1923.[2] At any rate, *the only price advances that timed*

[1] The end-of-the-quarter figures were of course not available at the time of the rate increases. But the optimistic spirit of business undoubtedly was sensed by reserve officials.

[2] To those who are highly impressed by citations of opinions of reserve officials which seem to support the price-stability interpretation, we would offer the following testimony of A. C. Miller when interrogated by John R. Commons before the House Committee on Banking and Currency: "The Federal reserve, to the extent it gave a good performance at that time (early 1923), gave it because it was not concerned with stability of prices. Prices were moving rapidly upward, but I think the

with credit restraints were mild price advances which occurred in spite of a high volume of basic production.

According, then, to our view, policy achievements of this period (1922 to the spring of 1923) were especially noteworthy. During these months we witness the first reaction from the fright generated by the crisis of 1920. Reserve discount rates were reduced from the high levels of the "deflation" period and the Reserve Banks were not impelled to the easy policy of developing along the lines of mere emergency institutions. The bolder and more promising course was steered of keeping in constant contact with the market, a policy which necessitates more discriminating judgment and prompter action when dangers develop. Of still greater importance, however, in the determination of general guides to credit policy, the Reserve Banks were not impelled, as they must have been sorely tempted, to give price indices extreme emphasis in their formulations of policy and to apply restrictive measures prematurely. Somewhere in the system there was profounder and more discriminating thinking regarding the tests of sound credit than was developed in the greater part of popular or technical discussion. With all this, the Reserve Banks were prompt to act when consideration of all factors seemed to require credit restraints.

This commendation is not to be taken to indicate, however, that in the experience of 1922 and 1923 the

judgment of the federal reserve may be properly said to have amounted to about this, that it did not interpret that upward movement of prices as inflationary in character, because close tab on the situation showed that though prices were moving upward, so was production and trade, and sooner or later production would overtake the rise of prices, demand would be satisfied, and prices in turn would trend downward, and, as a matter of fact, I think they did beginning about midyear, 1923.

If we could go back now, or if we knew then what we know now, my own disposition would be to say that the Federal Reserve might even have dispensed with the slight precautionary operations that it then engaged in, to wit, an advance of the discount rate in New York, I think in March of 1923." See *Stabilization Hearings* of 1928, p. 295.

Reserve Banks and the Reserve Board discovered principles applicable to all situations and that there were no gaps or flaws in their analyses. It must be remembered that the period here examined was unusual in many respects. It followed hard after the most severe price reaction in this country's recent history and represented a recovery from the depths to which industry had descended in the crisis of 1920. It would be expected that contemplation of the mistakes of 1919 to 1920 would make us oversensitive to the future dangers of employing reserve credit in an inflationary manner. For such extremities the Board's doctrine of 1923 may have provided the correct antidote.

But in later years the character of reserve problems may have altered in such a way as to make this doctrine less applicable. It may be that, in years of milder industrial fluctuations, general trade, rather than basic production indices, would serve to suggest the real need of business for credit. It may also be true that international factors were to become more important, that it would appear impossible for this country to adapt its credit policy with so large regard for domestic developments. In 1923 we may have been destined to enter a period in which wisdom would demand that greater attention be paid to the prewar principles of central banking, with renewed emphasis upon reserve ratios, gold flows, and the foreign exchanges. It might also be true that in the future it would become more essential to stress the conditions according to which in individual situations reserve credit should be released to member banks rather than the broader issues here brought forward. On the other hand, we may perhaps finally conclude that, after 1922 and 1923, the dominant personalities in the reserve administration have lapsed in their grasp and understanding of credit necessities. All this must be examined in later chapters.

CHAPTER II

FEDERAL RESERVE POLICY FROM THE SPRING OF 1923 TO THE CLOSE OF 1924[1]

I. THE TRADE RECESSION OF THE SPRING OF 1923

In a number of important respects the check to the trade recovery in the spring of 1923 seemed to many business forecasters misplaced and thoroughly illogical. From the point of view particularly of lags and sequences, a number of the customary prewar relationships were not maintained. If, to demonstrate this point, we utilize the Harvard Index of General Business Conditions, we observe in the first place that the money curve, depicting commercial-paper rates, reached its turning point for the year in May (1923)—at a point only slightly above "normal"—the month in which the business curve began a simultaneous downward movement. The typical relationships in past recessions had been for the money curve to continue its upward movement, far above normal, some time after the business curve had come to its peak. Furthermore, in the spring of 1923, the speculative curve, made up of New York City bank debits and prices of industrial stocks, did not rise far above its computed normal. Neither did it begin its downward movement much in advance of the decline of the business curve.

The termination of the trade recovery in the spring of 1923 may therefore be characterized as a recession without money strain. In prewar days, serious reactions of this sort were unusual. Under the extremely inelastic

[1] Adapted from Harold L. Reed's Federal Reserve Policy 1923–24, *The Journal of Political Economy*, vol. XXXVII, No. 4. Used by permission.

credit machinery of our old banking system, trade reactions coinciding with credit pressure tended to dwarf by comparison other types of business slumps. It was then more or less inevitable that most explanations of crises and depressions, of non-continental origin at least, should give large emphasis to credit and banking phenomena.

For a time after the organization of the reserve system general opinion became very cautious in basing predictions upon a money-strain analysis. During the flush days of war and of postwar business activity many responsible business leaders ventured even to assert that violent trade reactions, under the new banking system, had become impossible. Such optimistic predictions, however, were destined to be tempered by the tragic events of 1920 and 1921. In those years the country witnessed an industrial reaction which, while it avoided a credit panic, initiated a price liquidation of severer dimensions than the country had ever before experienced in so short a period of time. At this juncture, moreover, prewar relationships seemed generally to be maintained. In the Harvard Index Chart the curve representing speculation first displayed weakness, then general trade and industry, with strain in the money market prevailing for many months.

The rude shock of the 1920 crisis did much to reestablish former opinion that credit strain would continue to play a dominant rôle in the development of major economic depressions; and that perhaps the power of the reserve system to smooth the fluctuations of the business cycle had been grossly exaggerated. Everywhere there was a general disposition to forget that the events of 1919 and 1920 were unlikely to be repeated in the near future. For many months in the postwar boom, money rates had been kept artificially low by Treasury influence, so that unusual scope was afforded for the forces of reaction to develop. At the same time, a violent, though

temporary, outflow of gold shortly made it clear that the basis of further inflation had been, at least in large degree, destroyed. In other words, complications growing out of the war operated to produce the same type of results as the inelastic credit machinery of the old banking system. Memories of 1920 did much in the following years to reaffirm the earlier belief that a serious depression, without money strain, was unlikely.

So unexpected, therefore, was the cessation of recovery in 1923, when money strain was absent, that many forecasters have consistently refused to admit the seriousness of the ensuing depression. They frequently insist that 1923 and 1924 represent merely a temporary pause in a generally ascending trade advance destined eventually to reach hitherto unattained heights. Yet the Board's seasonally adjusted index of production in basic industries fell from 127 (1919 = 100) in May, 1923, to 94 in June, 1924, at about which figure it was to remain during July and August. Not until September, 1924, was it to pass the 1919 norm. The Board's Revised Index of Employment in Manufacturing Industries fell from 105 in June, 1923, to 89 in July, 1924;[1] and Carl Snyder's composite index of the physical volume of trade, which takes account of secular as well as of seasonal changes, declined from a relative of 113 in March, 1923, to 99 in June, 1924.[2]

II. THE ABSENCE IN 1923 OF SERIOUS PERPLEXITY IN FEDERAL RESERVE CIRCLES

In view of the fact that the gold imports of 1922 had done so much to threaten the ability of the Reserve Banks to maintain money-market contact, in view further of the fact that the net gold inflow of 1923 exceeded that of 1922, and in view finally of the fact

[1] *Federal Reserve Bulletin*, May, 1925, p. 329.

[2] See SNYDER, CARL, The Revised Index of the Volume of Trade, *Journal of the American Statistical Association*, September, 1925, p. 404.

that in the first half of 1923 the Reserve Banks' total earning assets remained almost constantly below the figure which perhaps was regarded as the apprehension point $1,200,000,000—it would be expected that reserve problems in 1923 should have presented the most serious perplexities.[1] In this respect, however, 1923 was destined to occasion surprise. In the minds of many reserve officials, at least, 1923 was their ideal year. After Mar. 6 no rate changes were put into effect and the discount demand throughout the year proved sufficiently heavy to enable the Reserve Banks to maintain total earning assets around $1,200,000,000 without engaging in as extensive open-market purchases as in 1922. In its report for 1923, moreover, the Board was to announce allegiance to the disclosures of production indices in the formulation of its credit policies. The tone of this report was not what would have been expected if an atmosphere of doubt had pervaded federal reserve deliberations. The recommendations of this report seem to have been born of confidence that progress was being realized in determining permanent principles of reserve guidance. During the entire year, furthermore, there was no definite trend in commodity prices, so that the Board and the Reserve Banks received much commendation—perhaps undeserved and undesired—from the adherents of the policy of price stabilization because of the alleged steadying influence of the system's activities upon the course of prices.

III. THE EFFECT OF THE GOLD INFLOW OF 1923 UPON THE OPERATIONS OF THE RESERVE BANKS

Since the net gold inflow of 1923 exceeded 294 millions and since the total volume of reserve credit held a fairly steady course, the aggregate of member-bank credit

[1] Earning assets averaging $1,200,000,000 would produce enough earnings to afford a comfortable margin out of which to defray operating expenses and member banks' dividends.

would be expected to have experienced a considerable expansion during the year. In 1923, moreover, the percentage of time to net demand deposits of all member banks increased from 51 to 57 per cent. This tendency toward relatively larger time deposits was an additional factor operating in the direction of member-bank credit expansion.

In 1923, however, member-bank credit expansion was not nearly so great as the gold imports of that year would be expected to have induced. At that time, the ratio of member-bank deposits to member-bank reserve accounts was more than 10:1. It might reasonably have been predicted, therefore, that the $294,000,000 of imported gold would result in an enlargement of the volume of member-bank credit by some such figure as $3,000,000,000. The actual expansion was only one-third of this amount. From Dec. 29, 1922, to Dec. 31, 1923, total loans and discounts of all member banks increased by about $1,000,000,000[1] while the investment holdings of these banks experienced practically no change.

Partial explanation of the restricted volume of member-bank credit expansion could be found in the fact that some of the imported gold was required to serve as the basis for credit extension by non-member banks. Inasmuch, however, as member banks possessed about three-fifths of the total deposits of all the banks of the country, the absorption of gold in non-member bank credit would not account completely for the failure of the volume of member-bank credit to expand more sharply. What must have occurred was that the imported gold went largely into general circulation and not in full measure into the reserves of the Reserve Banks.

It is not difficult to establish the fact that it was the general circulation which absorbed most of the imported

[1] If member-bank credit be measured by total deposits instead of by loans and investments, the expansion would be about $1,215,000,000.

gold. Between Dec. 30, 1922, and Dec. 31, 1923, total cash reserves of the Reserve Banks actually declined by the amount of $10,000,000. This decline took place during a period in which net gold imports approached $300,000,000 and in which the country's total monetary stock of gold increased about $315,000,000.

During 1923, moreover, the increase in the volume of money in circulation was generally steady and constant. By virtue of this fact it was possible for the volume of reserve credit to be maintained at a relatively stable figure. Gold imports tended to be canceled by the enlargement of the supply of money in general circulation outside the vaults of the Reserve Banks.

The increased demands of 1923 trade for currency may seem somewhat surprising in view of the fact that the spring of 1923 has been referred to as the termination of the previously developing recovery in basic industrial activity. But the peak reached in the spring was so high that, during 1923, even the volume of production in basic industries never sank to a low "average" as compared with earlier years. As a year, 1924 witnessed the only considerable sag in basic production; 1923 is to be characterized primarily as the stage of the cycle in which the production recovery was halted. Only in the autumn of 1923 did the Federal Reserve Board's index of production in basic industries sink below the high point reached in 1922. For the entire year of 1923 this index averaged 120, as against 98 for 1922. The spring of 1923, moreover, ushered in no such decline in general trade and distribution as took place in basic production. Mr. Snyder's index of the total volume of trade, for instance, averaged 105 in the last six months of 1923, as against 110 for the first six months.[1]

[1] Mr. Synder's indices are percentages of normal. Fine distinctions in the use of such figures would make it necessary, of course, to take a position on the disputed question of whether such corrected figures are preferable to uncorrected in determining the country's need for credit.

In a period of rapid trade recovery, furthermore, the drain of cash into general circulation may develop in a rather belated fashion. Trade expansion for awhile may express itself primarily in the form of an increase in the use of checks. As employment becomes more complete and pay rolls enlarge, more and more cash will find its way into the pockets of laborers. But numbers of wage-earners, as well as other individuals, are not yet in a position to increase their holdings of pocket cash to the same extent as after a period of steady employment. They have too many pressing demands to warrant the luxury of keeping much more money available for emergencies. In the early stages of recovery a relatively large portion of their cash receipts will shortly find its way back to the banks. But after some months of steady employment laborers will be better able to increase what Hawtrey calls their "unspent margins." Then the general circulation will absorb a larger portion of the country's stock of money. That this process was fairly well anticipated by the analytical experts of the Federal Reserve Board is indicated by the following quotation from the *Bulletin* for May, 1923:[1]

> If the relation between pay roll and Federal reserve notes which held during previous years continues, the rapid increase in the pay roll since the middle of 1922 will soon result in demand for currency, and in order to secure additional currency member banks will seek accommodation at the reserve banks.[2]

It is chiefly in such variations in the public's cash requirements that justification must ordinarily be found for extensive changes in the supply of reserve credit. A

[1] P. 540.

[2] In the *Federal Reserve Bulletin* for July, 1926, p. 468, there is a chart comparing the amount of money in circulation with an index of pay-roll disbursements and retail trade. Despite irregularities it seems to the writer that it sufficiently indicates the tendency of the money-in-circulation curve to lag behind the pay-roll curve during the years 1922 and 1923.

dollar borrowed from the Reserve Banks permits a member bank to increase its cash payments to the public by only $1. But if the dollar borrowed had been kept on deposit with the Reserve Bank for the sake of increasing the member bank's legal reserve—and not to obtain currency for counter use—it would be possible for the deposit credits of member banks to be enlarged by amounts exceeding perhaps $10.[1] Wide fluctuations in the amount of reserve accommodation must lead to extreme changes in the supply of member-bank credit—unless offset by corresponding changes in the country's monetary circulation.

IV. RESERVE CREDIT POLICY DURING 1923

It was thus in large measure the currency demand which enabled the Reserve Banks to maintain money-market contact during 1923 despite the continued gold inflow. The steadiness in the supply of reserve accom-

TABLE V.—RESERVE BANK CREDIT IN 1923
(Average daily holdings in thousands of dollars)

Month	Total earning assets	Discounted bills	Bills bought in open market	U. S. securities
January	1,191,191	548,969	220,733	421,469
February	1,152,862	610,755	186,648	355,459
March	1,178,919	628,519	232,486	317,897
April	1,164,606	659,932	274,533	230,102
May	1,173,194	708,394	271,263	193,488
June	1,124,891	744,306	225,396	155,133
July	1,119,787	837,039	185,807	96,922
August	1,078,204	811,251	176,950	89,988
September	1,123,472	847,885	173,619	101,830
October	1,150,593	875,158	183,671	91,447
November	1,147,765	801,388	262,304	83,818
December	1,200,351	774,733	322,431	103,099

[1] Interbank relationships of course operate to make this expansibility hold for the entire banking system rather than for the individual bank.

modations throughout the year is indicated by the figures in Table V.

Throughout the year discount demand tended to enlarge and the total volume of earning assets held up steadily to a satisfactory figure[1] even though holdings of government securities were considerably reduced.

Various federal reserve officials have frequently stated that the growing strength of the discount demand during 1923 developed a considerable opinion within the ranks of the reserve administration to the effect that restrictive measures should shortly thereafter be initiated. The decline in holdings of government securities seems further to indicate that the way was being prepared for discount-rate increases. However this may be, no discount-rate increases were invoked after the uniform schedule of 4.5 per cent had been set up in March. The falling course of wholesale prices—from January to December the Bureau of Labor's all-commodities index fell five points from 156 to 151[2]—along with the tendency of department-store inventories to increase, and also the check to the growth of basic production, may well have been interpreted to indicate that business should not yet be compelled to sustain the discouraging influence of higher discount rates. The only reasonable conjecture is that at the end of the year most reserve officials were inclined to wait for further developments before initiating radically altered policies.

V. THE COURSE OF RESERVE BANK EARNING ASSETS DURING 1924

To begin the study of 1924 we may first show the changes which took place in the volume and composition of the Reserve Banks' total earning assets (see Table VI).

[1] As appraised from the standpoint either of earnings' requirements or closeness of market contact.

[2] This is not, of course, the present revised index, which was not then available to the reserve administration or to anyone else.

The outstanding facts revealed by these figures are the following: (*a*) Total earning assets by the middle of the year had fallen to the lowest figure reached since the early years of reserve operation. (*b*) By July, holdings of United States securities exceeded the total of bills discounted and bought in the open market. (*c*) By November, discounted bills had fallen to less than a fourth of total earning assets.

VI. THE GENERAL PURPOSE OF RESERVE ACTIVITIES DURING 1924

The usual interpretation of reserve policy in this year (1924) has been that the Reserve Banks were seeking to utilize open-market operations primarily for the purpose of maintaining the volume of reserve credit at a high figure and thereby to ease further the general credit situation. In the last half of the year particularly the figures given would seem to prove this conclusion. During this period discounted bills averaged less than $300,000,000, whereas United States securities averaged considerably above $500,000,000. After May 1, moreover, many rate reductions were initiated with the result that at the close of the year the 3 per cent rate prevailed in New York; the 3.5 per cent in Boston, Philadelphia, San Francisco, and Cleveland; and 4 per cent in the remaining seven districts.

It would seem therefore that attempts were being made to stimulate member-bank discounting as well as to enlarge the Reserve Banks' portfolio of securities. It might be contended, with some show of justification, however, that during the first half of the year open-market purchases were engaged in primarily for the purpose not of keeping outstanding merely a large volume of reserve credit but of replacing discounted bills with purchased securities in reserve portfolios. The

Annual Report[1] of the Board for 1924 affirms the desirability of holding a substantial portion of reserve bank assets in such form that the initiative of the Reserve Banks could be effectively and promptly exercised. During the first four months of the year, furthermore, no attempt was made to stimulate the discount demand by lowering rate schedules.

TABLE VI.—RESERVE BANK CREDIT IN 1924
(Average daily holdings in thousands of dollars)

Month	Total earning assets	Discounted bills	Bills bought in open market	U. S securities
January	1,000,618	580,371	302,509	117,761
February	921,588	516,171	271,408	133,990
March	951,774	479,369	229,650	242,682
April	940,493	494,537	173,666	272,238
May	839,571	435,429	80,814	322,986
June	842,963	374,592	51,125	415,970
July	825,999	318,252	44,132	462,365
August	836,534	269,665	28,371	536,958
September	930,965	262,755	89,777	575,470
October	1,005,742	240,907	177,949	584,953
November	1,085,027	229,039	265,926	587,075
December	1,220,706	301,716	356,613	554,587

But it would not seem that the desire to effect an ideal arrangement of reserve bank earning assets could have been the explanation of reserve activities during the latter half of the year. When discount holdings become less than one-fourth total earning assets, as in November, there is little question that the Reserve Banks are deliberately selecting the most effective means of easing the credit situation promptly. By way of citing corroboratory opinion, Governor Strong has testified that the general purpose of the New York Reserve Bank in 1924 was to free member banks gener-

[1] P. 12.

ally of reserve indebtedness and thereby to eliminate credit pressure.[1]

VII. THE EFFECT OF FEDERAL RESERVE OPERATIONS UPON MEMBER-BANK CREDIT

From Jan. 1, 1924, to Jan. 1, 1925, the volume of money in circulation increased only by the relatively insignificant amount of $3,600,000.[2] In the same year, as a consequence of continued imports, the monetary stock of gold increased by more than $256,000,000.[3] With the gold imports going almost entirely into the reserve vaults, and with total earning assets of the Reserve Banks at the close of 1924 even exceeding those prevailing at the close of 1923, a large part of the addition of $320,000,000 to member-bank reserve balances is explained. This enlargement of member-bank reserve balances supplied in turn the basis for a much larger increase in the offerings of credit to the business world. For all member banks Table VII shows the enormous growth of credit.

TABLE VII.—ALL MEMBER BANKS
(Millions of dollars)

	End of		Increase
	1923	1924	
Loans and discounts	19,052	20,181	1,129
Investments	7,686	8,845	1,159
Total loans and investments	26,738	29,026	2,288
Demand deposits	16,086	17,766	1,680
Time deposits	8,651	9,805	1,154

The total loans and investments of the reporting member banks were increasing for a while in the fall

[1] *Stabilization Hearings*, 1926 and 1927, Part I, p. 336.
[2] *Federal Reserve Bulletin*, December, 1927, p. 802.
[3] *Ibid.*

of 1924 at an annual rate of about 18 per cent.[1] At no other time in the history of the reserve system since 1919 has credit expanded so rapidly for any extended period.

VIII. THE OUTLETS FOR THE EXCESS SUPPLY OF CREDIT

Neither the movement of commodity prices nor changes in the volume of general trade explains the need of much more credit in 1924 than in 1923. This is partially illustrated by the indices in Table VIII.

TABLE VIII.—VARIOUS VOLUME OF TRADE INDICES FOR 1923 AND 1924 COMPARED

Month	Wholesale trade average monthly sales 1919 = 100[1]		Department store average monthly sales 1919 = 100[1]		Production in basic industries[1] 1919 = 100[2]		Bureau of labor wholesale price index 1913 = 100	
	1923	1924	1923	1924	1923	1924	1923	1924
January	78	80	101	109	121	120	156	151
February	76	78	90	102	120	120	157	152
March	86	80	124	115	125	116	159	150
April	79	78	119	133	124	114	159	148
May	80	77	128	127	127	103	156	147
June	83	76	126	121	122	94	153	145
July	79	78	89	90	121	94	151	147
August	88	83	100	93	120	94	150	150
September	91	92	113	119	114	103	154	149
October	96	96	148	141	118	109	153	152
November	85	84	142	141	116	107	152	153
December	72	79	202	210	110	117	151	157
Average	82.7	81.7	123.5	125.0	119 8	107.5	154 2	150.0

[1] Federal Reserve Board indices
[2] Seasonality allowed for.

To locate the outlets of the enlarging credit supply of 1924 it therefore seems necessary to turn our attention to security operations.

The most comprehensive evidence available in condensed form relative to the growth of speculative and investment operations is perhaps supplied by the finan-

[1] According to the unpublished calculations of Carl Snyder.

cial group of Mr. Snyder's index of the volume of trade. This group comprises issues of new securities, stock sales, grain sales, cotton sales. For 1923 and 1924 the averages of this group are as shown in Table IX.[1]

TABLE IX.—SNYDER'S RELATIVES OF FINANCIAL ACTIVITY

Month	1923	1924
January	145	128
February	124	115
March	132	105
April	119	107
May	120	121
June	119	98
July	77	129
August	71	117
September	80	122
October	91	134
November	138	153
December	132	178

For the last six months of 1924, this financial group index averaged 138.8, as against 98.1 for the last six months of 1923. As regards the advance in stock prices, the monthly average of 20 industrial stocks as given by the *Wall Street Journal* increased from 90.5 in May, 1924, to 114.2 in December, 1924. In the same period, 20 railroad stocks rose from 82 to 97.8.[2]

Abundant evidence of this character is therefore available to convince many analysts that the growth of speculative activity was chiefly responsible for the absorption of the increasing mass of credit, particularly in the latter half of 1924.

[1] See *Journal of the American Statistical Association*, September, 1925, pp. 404*ff*. These indices allow for seasonal and secular changes. The figures given are percentages of "normal." Such corrected relatives could not, of course, be used if fine distinctions were necessary.

[2] See Statistical Record, *Review of Economic Statistics*, vol. VII, 1925, p. 148.

It is not clear, however, that an increase of speculative operations makes the same demands upon the country's supply of bank credit as expansions of other business and industry. In security trading, funds acquired by the seller are likely to be reemployed almost immediately in new purchases on the part of the seller. In margin trading, moreover, purchasers do not usually borrow or otherwise build up bank accounts far in advance of the time of purchase. Brokers commonly do not borrow until after clients have put in their orders. Under these conditions, a little money may permit an enormous amount of security purchases to be financed in a comparatively brief period. It is probable that a dollar employed on the street in security trading has a yearly turnover ten or twelve times as great as in the transactions of general business. This fact may explain, in part, why in his index of the physical volume of trade Snyder has given the financial group a weight of only 6 per cent, as compared with 29 per cent for productive activity, 22 per cent for primary distribution to consumers, and 17 per cent for general business.[1] Certainly, increasing security activity could not account fully for the growth in the outstanding volume of bank credit during the latter half of 1924, particularly.

Examination of figures bearing upon the activity of bank deposits leads to the same conclusion that security trading in particular, and speculative activity in general, do not completely account for the credit expansion of 1924. Dollars employed in security operations have a very rapid turnover. If any considerable portion of the enlarging supply of credit came to be tied up in security trading it would therefore be expected that velocity figures, relating to bank deposits, would show a marked tendency to increase, particularly in the

[1] The principal purpose in constructing this index was to determine the need of business for credit.

latter part of the year. But velocity relatives for 1924 show, if anything, a declining tendency, as in Table X.[1]

TABLE X.—VELOCITY RELATIVES IN 141 CITIES

1924		1924	
January	100.0	July	99.0
February	102 1	August	102.7
March	101.0	September	97.7
April	100 6	October	95.2
May	99 2	November	98.3
June	100.0	December	99.6

Further analysis of the evidence, moreover, makes it unmistakably clear that the activity of bank deposits of all classifications tended to decline in the latter part of the year. During 1924, time deposits grew at a relatively faster rate than demand deposits. For all member banks demand deposits expanded by $1,520,000,000, or 10 per cent. For the same banks, time deposits increased $1,154,000,000, or 13 per cent. It is impossible to state exactly what portion of this increase of $1,154,000,000 represents savings and what portion represents the transfer of accounts, just as commercial in character as any, from the demand to the time classification. But general testimony of bankers indicates that the transfer of commercial deposits from the one class to the other was considerable. By placing as large a portion of bank accounts as possible in time accounts, the depositor avoided loss of interest, and the banks gained the advantage of lower reserve requirements.

Time deposits ordinarily are withdrawn much more slowly than demand deposits are checked against.

[1] These relatives were obtained through the courtesy of Mr. Snyder of the New York Reserve Bank. They relate net demand deposits of reporting member banks in 141 cities to debits to individual account. Since in recent years no discoverable secular trend has been disclosed, the principal adjustments of the crude figures are made on account of seasonal fluctuations.

It is probable that the annual rate of turnover of demand deposits is seven or eight times as rapid as that of time deposits. With an increasing tendency to remove the more sluggish funds from demand to time deposits, it would be expected that the actual figures relative to velocity of demand deposits would show an increase.[1] This they did not do.

To conclude this argument, two reasons have been brought forth to indicate that, if bank accounts were not tending to become less frequently utilized, published velocity figures of demand deposits would have reported an increase. One was the growth of security operations in the financing of which dollars are customarily turned over very rapidly. The other was the transfer of a considerable volume of the more sluggish funds from demand to time deposits. Since, despite these factors, demand deposits tended to circulate less rapidly, the evidence seems to indicate that it was not solely the increase in speculative operations but also the tendency of bank accounts to stagnate that enabled the country to absorb the expanded supply of bank credit of 1924. This period was one in which credit was actually tending to become redundant. Velocity analysis therefore supports the previous conclusion that in the latter part of 1924 the Reserve Banks were aggressively using their powers further to ease the credit market. It accordingly is our next task to determine whether this policy should be commended.

IX. THE ABANDONMENT OF PRODUCTION INDICES AS A GUIDE TO RESERVE CREDIT POLICY

In the preceding chapter, the utilization of basic production and other auxiliary indices as guides to reserve credit policy was favorably commented upon.

[1] Assuming that the increasing supply of bank credit was being promptly absorbed in an enlarged volume of speculative operations.

In particular it was argued that the employment of these means of measuring the desirable volume of credit in 1922 supplied the Reserve Banks with some authoritative statistical basis for refusing to impose premature credit checks upon the trade recovery. It might therefore have been predicted that the disclosures of production indices would have had a considerable influence upon reserve activities in 1924. If such tests had been employed, restrictive instead of alleviatory measures would have been expected of the Reserve Banks in 1924. In the greater part of that year outputs generally tended to sag.

Since, however, the Reserve Banks operated in 1924 to ease the credit situation it is clear that the disclosures of production indices were abandoned in that year as a guide to reserve credit policy. It becomes necessary therefore to determine whether this sacrifice of production indices is to be lamented. To answer this question it may be helpful to review some of the reasons why the utilization of production indices in the formulation of reserve credit policies had previously been urged by many statistical analysts.

In the first place, it was argued that the theory of productive credits afforded the Reserve Banks a satisfactory basis of interpreting the troublesome clause in the reserve act "accommodating commerce and business." Liberally construed, this clause might be held to mean that the mere desires of member banks should be determining in the fixation of reserve discount rates. At least this clause in the reserve act might be taken to indicate that so long as the Reserve Banks possessed ample resources, and so long as their advances to some member banks were not threatening to deprive the Reserve Banks of power to extend liberal accommodations to other member banks, restrictive measures should not be invoked.

After the reserve act was written, except for a brief period of extensive gold outflow in 1919 and 1920, the Reserve Banks came to hold very large surplus reserves. It became clear that the granting of all the credit their reserves would permit would make the Reserve Banks machines for an undesirable degree of credit expansion. The avoidance of inflation, however, would be difficult unless some test more or less "economic" in character could be set up to determine the meaning of "accommodating commerce and business." To many the desirable test of this character seemed to be the presumed effect of reserve-credit activity upon the level of prices. But nowhere in the act was permission granted the Reserve Banks to base their discount and open-market policies upon the requirements of price stability.

By making the test of "accommodating commerce and industry" the physical accomplishments of production, however, it might be possible to avoid the extremes of price inflation and deflation. As long as expanded credits are being matched by increased production, goods are being prepared for the market somewhat apace with the distribution of larger money incomes, with which goods may be bought. Supply and demand relationships, therefore, need not be seriously disturbed in a period of expanding credit, as long as production is increasing somewhat proportionately. By accepting the doctrine of the productive uses of credit, therefore, extreme price derangement might be avoided, even though no formal allegiance was declared in behalf of commodity-price stabilization.

In the second place, moreover, the adaptation of the credit volume to the supposed necessities of production seemed to avoid the error, to which dependence upon price indices might be subject, of overemphasizing the function of money as a standard of deferred payments. A stable standard of deferred payments, other things

equal, is a desirable goal of a well-managed currency system. But there might arise occasions in which to enable industry to create the largest product it would be necessary to permit an expansion of credit, even though prices at the time might be rising. There might conceivably be other occasions in which, even though prices tended to fall, a contraction in the volume of credit would be justified.

Finally, many statisticians and economists became convinced that production-index numbers avoided some of the technical difficulties of price-index number construction. Whether correct or not, it was often insisted that the volume of production in basic industries affords a truer picture of general conditions than can be provided in the price field by any price index or weighted combination thereof. Still others argued that production indices had the advantage of giving earlier clews to action than commodity or general price averages.

Before the World War very little had been done in the construction of comprehensive production index numbers. The earlier work of Kemmerer and Fisher had been confined largely to estimating the relative importance of the various factors symbolized in the equation of exchange. In 1918 and 1919, Wesley C. Mitchell, in his work with the War Industries Board, endeavored to summarize the net changes in the production of 90 commodities.[1] In 1921, Walter W. Stewart published his Index Number of Production, and it is reasonable to presume that it was largely on the foundation of this earlier work that the Basic Production Index of the Federal Reserve Board was later built.[2]

Such efforts as these, confined mainly to the field of basic production, seemed to indicate that industry's

[1] *Federal Reserve Bulletin*, Apr. 1, 1919, p. 337.

[2] An Index Number of Production, *American Economic Review*, Mar. 1, 1921, p. 68.

need for credit is subject to rather wide variation. Illustrations of this fact have been many times offered in these chapters from the Basic Production Index of the Board. But other indices of the Board, shortly forthcoming, as well as the comprehensive attempts of Snyder to sample the year-to-year fluctuations in all trade, indicated that the elements which had previously gone into production indices exaggerated the degree of fluctuation in the whole field of business and trade. Despite the controversy which has been waged over the technical aspects of his work, Mr. Snyder seems to have shown conclusively that the cyclical fluctuations in the physical volume of trade have not been nearly so great as hitherto supposed. Snyder's work, furthermore, seemed to indicate that the principal need for variations in the supply of credit arises in the secular elements of growth.

The general results of this type of investigation supported the thesis that moderate and steady increases in the country's supply of credit might suffice to meet industry's long-time requirements with reasonable satisfaction. During the upswing of business after recovery —in the typical cycle—a credit policy which would hold back the growth of credit to this rate of increase would presumably not handicap industry in the long run but rather would contribute toward prolonging the period of activity at a physical volume not so far removed from the country's potential maximum as had been generally supposed. On the other hand, during periods of sags in outputs, surplus funds would be automatically provided to afford some credit stimulus toward corrective expansion.

The abandonment of production indices as the final proof of the real need of industry for credit in 1924 does not therefore mean that in the deliberations of reserve officials the results of statistical measurement were being entirely disregarded. Instead, new statistical

interpretations may have been relied upon to supply analytical support for policies otherwise suggested to the various administrative officials of the system.

But far from witnessing a moderate expansion of credit, 1924 experienced a larger growth of member-bank credit than even a normal year would seem entitled to. Our next problem is accordingly to determine whether justification for the reserve policy of 1924, of permitting this degree of expansion, could be found in the special conditions of that year. In this connection we must next turn our attention to international currency developments.

X. FOREIGN ASPECTS OF THE PROBLEM

So far at least as the movement of prices and exchange rates are concerned, foreign developments from the autumn of 1923 until the summer of 1924 had not been highly encouraging to various European nations faced with the task of currency reconstruction. In this period, while prices in the United States were practically stationary, the price level in England rose approximately 10 per cent.[1] In France, the Federal Reserve Board's index stood at 391 in August, 1923. By June, 1924, it had advanced to 442. Exchanges moved downward with these declines in purchasing powers, so that in June, 1924, an index of the English, French, and Italian exchanges had fallen several points from the figure prevailing in the autumn of 1923.[2] These events were taking place at a time in which England was devising plans for the restoration of the prewar sterling par and in which the Dawes Commission was laying the basis for a bank of issue whose responsibility would be to stabilize the exchange value of German currency.

[1] As measured by Federal Reserve Board indices of wholesale prices for all commodities; converted to a gold basis.

[2] *Cf. Federal Reserve Bulletin*, August, 1924, p. 614.

Particularly from the standpoint of its effect upon reform sentiment in other European countries the completion of the movement to restore sterling to its prewar gold position was of great significance. Already a reasonable degree of exchange stabilization had been effected in Austria, Hungary, Czechoslovakia, Finland, Esthonia, Latvia, and Lithuania. In May, 1924, Poland also undertook a financial reform by providing for a new bank of issue. If England, with its tremendous prestige and widespread financial ramifications, should succeed in returning to the gold standard on the terms prevailing before 1914 confidence could be had in the ultimate outlook for financial reorganization in Europe. By this, no position is here taken on the question whether, for England, the benefits of stabilizing at the old par would compensate for the sacrifices involved. What is argued is that, with most English statesmen intent upon a return to the prewar par, advantage would accrue to the United States in assisting the process by any reasonable means within its power.

But what could banking authorities in this country do to hasten European financial reconstruction? As far as England was concerned, a mild price advance confined to this country would lighten the burden considerably. A price advance of 10 or 15 per cent in the summer of 1924 would have gone far to establish relative purchasing powers at the old par of exchange between the dollar and the pound. Since English thought, with some dissenting opinion, seemed resolute to accomplish the reestablishment of the old par of exchange, a little price inflation here, rendering unnecessary much further deflation in that country, might be regarded as a very cheap price to pay for the advantages of terminating exchange instability.

On the other hand, a general failure to accomplish currency stabilization in England might discourage

gold restoration in other European countries and finally lead to far greater price disturbance in the United States than that which would be necessary to reestablish purchasing-power parities at the ratio of 4.86:1. With European exchanges unstabilized, more and more gold might be drawn to this country to meet adverse balances, and it would be difficult to keep this gold from stimulating a price advance eventually. At the worst, gold might be demonetized abroad with the result that this country would be surfeited with a metal shorn of the largest part of its value. Mild and temporary price inflation here would be a small sacrifice to bear if these greater dangers could be avoided.

Any such project as this, however, would have to overcome many difficulties. In the first place, could a general commodity price advance have been achieved in this country merely by the more liberal offering of bank credit? With many industries operating considerably below full capacity, and with some degree of unemployment prevailing, an increasing credit volume—if this could be brought about—might stimulate production as rapidly as it increased money incomes. But assuming that a price advance could be accomplished here, could it be confined to this country alone? Would not such an advance tend to be communicated in part at least through the force of trade connections to other countries with the result that the reestablishment of purchasing-power parities at the desired ratios would necessitate further and perhaps continuous price inflation here?

Confident answers to these queries could not be made. But, short of price inflation, was there not some other respect in which assistance could be rendered European countries undertaking gold restoration? To the granting of a reasonable amount of credits directly to European central banks, which could be utilized in

meeting adverse balances, to conserve their gold, there could be little valid objection. But the utilization of any large portion of federal reserve resources in direct advances to European banks was politically impracticable. Reserve resources are supposed to be preserved for the emergency requirements of our own member banks. To dispatch them abroad in large volume would make the reserve administration highly vulnerable to political attack. Assistance to Europe must be attempted in ways which would seem to place the initiative in the hands of private American investors, or operate through the veiled medium of money-market relationships.

But if mild price inflation was either objectionable or unattainable, was any sort of assistance to European financial reconstruction within our reach? Might it not be possible for our Reserve Banks to work on interest rates, without affecting the internal commodity-price structure, at least to any considerable extent? Although price inflation usually begins with easy credits and declining money rates, this danger pertained largely to the future. In the meantime the world situation was critical, and if at a later date prices in this country should respond, corrective measures could then be invoked.

In a number of respects, lower money rates in our financial centers, particularly in New York, might ease the task of foreign banks. High rates here necessarily tend to attract the deposit in this country of foreign banking funds and, furthermore, to thrust more of the strain of financing short-time international trade transactions upon foreign institutions. It seemed desirable that we assist the Bank of England to retain its banking resources and that it be not subjected to the strain of an excessive volume of short-time financing in the London market. Of course, what would count in such operations would be relative rates here and abroad. But to keep

rates low here would perhaps avoid the necessity of rate increases abroad with their discouraging influence upon business sentiment.

Whether or not designedly, events in the summer of 1924 witnessed a reversal of the London and New York money rates. In the *Federal Reserve Bulletin* for February, 1925,[1] a chart is presented comparing New York acceptance and London bill rates. Throughout 1922 and 1923 and the first five months of 1924, New York was above London. At times the differential exceeded 2 per cent. In the late spring of 1924 the rates crossed, and for the rest of 1924 the New York rate remained considerably below London's. Commenting upon this fact, it is remarked in the *Bulletin* that:

> . . . this differential led to a flow of funds from New York to London and was an influence in diverting a large volume of foreign borrowing from the London to the New York market.

Thus far, however, we have spoken solely in terms of money rates and not in terms of credit volume. In analyses of this sort it is always essential, however, not to jump quickly to the conclusion that money rates respond proportionately to increases in the supply of available credit. It was possible that liberal credit policies by the Reserve Banks in 1924 might result principally in stimulating operations which otherwise would not be able to secure credit, but with little or no effect upon money rates. In this respect the policy of the Reserve Banks in the last half of 1924 may have exercised its principal effect in enlarging the available supply of credit instead of cheapening money rates. Let us accordingly consider the problem of assisting Europe from the standpoint merely of rendering a large supply of credit available for European industry.

Financial reform in Europe offered much promise from the standpoint purely of technical banking and

[1] P 99.

credit advantages but could not be expected to succeed permanently unless accompanied by some degree of economic revival. With trade balances continuously adverse, temporary credits offered to European central banks must ultimately cease. To offer the greatest stimulation to European industry, permanent capital was required from us. The most significant test of the efficacy of the reserve system's easing measures may perhaps then be found in the extent to which they seem to have facilitated the flotation of foreign securities in this country.

Table XI gives some information regarding the volume of American investment in foreign securities.

TABLE XI.—NEW CAPITAL ISSUES IN THE UNITED STATES FOR EXTERNAL PURPOSES, 1920–1926[1]

Year	Amount, millions of pounds sterling converted at par	Per cent of total new capital issues in the U. S.
1920	82	11.0
1921	114	15.5
1922	138	15.7
1923	56	6.4
1924	206	18.0
1925	225	17 6
1926	237	18.3

[1] Reproduced from February–March, 1927, *Monthly Review of the Midland Bank, Limited*, p. 5. These figures were compiled from the computations of the *Commercial and Financial Chronicle*.

These figures show that in 1924 there did begin to take place an enormous increase in our total volume of foreign flotations. The figures in the second column further indicate that in this year the percentage of our total new capital issues represented by foreign issues considerably increased. It is probable that the success of these flotations was the result of two general factors:

first, the growing confidence in the future stability of European currencies; second, the abundance of credit in American money markets.

Many have contended that these issues were in excess of our own long-time interests. The argument in support of this view is that Europe was encouraged to dissipate prematurely its borrowing credit and that eventually its borrowings in the United States must be reduced. The future reduction of such credits must then lessen Europe's power to buy, at the same time that its selling necessities would be increased. At some later period of time the effects might be manifested in a sharp drop in American exports. It is therefore frequently contended that it would have been better for the United States if Europe had preserved more of its borrowing power for the years ahead.

Problems of this character cannot be satisfactorily answered here. On the one hand, attention could be directed to the critical stage of European restoration, both monetary and economic, in 1924. On the other hand, reference could be made to the probable development of forces which might tend eventually to retard American exports. Whether the pessimistic predictions for the future were amply met by pointing to prospects of increased exports to oriental and South American nations or of a general increase in foreign trade which would enable America to import more without exporting less is a problem whose answer the future alone can provide. It is perhaps safe to conclude, however, that if, from the standpoint of European requirements, the supply of American credit in 1924 was made too abundant, the difficulty was one of degree and not of direction. In the next section, however, some attempt will be made to determine whether any principle can be derived to bear upon the exact amount of credit relief then required.

XI. THE SPECIAL NEED OF ALLEVIATORY ACTION IN 1924

In view of the declining tendencies in trade and production in 1924, as well as of the failure of the general price level to move sharply upward, it might be contended that there was no special need in that year for easing measures by the Reserve Banks. Falling trade activity more or less automatically makes bank funds available for new enterprises. It might at least be held that there was no need for an expansion of credit at a more rapid rate than the annual secular growth in the physical volume of trade—say from 3 to 5 per cent. It is therefore somewhat difficult to defend the increase in the last six months in the volume of member-bank loans and investments at an annual rate of almost 13 per cent.

As an indicator, however, of the special need of easier credit, attention might be called to the course of agricultural prices. During the first half of the year the Bureau of Labor's price indices, old series, showed that farm products were falling even relatively to general wholesale prices (see Table XII).[1]

TABLE XII.—UNITED STATES BUREAU OF LABOR'S INDEX OF WHOLESALE PRICES

1924	All commodities	Farm products
	1913 = 100	
January	151	144
February	152	143
March	150	137
April	148	139
May	147	136
June	145	134

[1] It was not, of course, easy to maintain that more abundant credit could be confined in its price effects mainly to agricultural products. Many mild price inflationists went no farther than to insist that it would be desirable to take the chance that price improvement in general would improve the adjustments between various classes of prices.

This decline in farm-products prices took place during a period in which much had already been done by the Reserve Banks to ease the credit situation. In the second quarter of 1924, total loans and investments of all member banks had expanded at an annual rate of almost 6.5 per cent. In this quarter also the New York Bank had twice reduced its rate by steps of 0.5 per cent. Purchases by all Reserve Banks had furthermore given government securities a position in reserve portfolios of about one-half of total earning assets. All of this might be interpreted to indicate the extreme seriousness of the agricultural depression and the consequent need of further relief measures.

In the meanwhile, prospects pointed toward bountiful crops, which would be expected to weaken agricultural prices still further and perhaps to such an extent as to impair the aggregate farm income. For this reason, as well as on account of the heavy concentration of bank failures in the agricultural districts, it might be reasonable to conclude that in the agricultural situation was to be found the clearest indication of the need of alleviatory measures. Political discontent in the Middle West, and the desire to avoid Congressional remodeling of the reserve system, supplied strategical reasons for a further hearkening to the difficulties of the farm elements in our population.

But, specifically, how could liberal credit policies on the part of the Reserve Banks help to improve the position of agriculture? In domestic directions, it might be contended that much benefit to farmer producers could be accomplished by further employing credit measures to hasten general industrial revival. In early 1924 there was a considerable amount of unemployment and the consequent possibility that through increasing employment the consumption of food products by urban workers might be enlarged.

Farm prices, however, are determined to a very large extent by foreign demand, and it appeared to many reserve officials that agricultural prospects could be markedly improved only by encouraging increased food exportations abroad. In two directions, this enlargement of foreign food demand might be developed by liberal credits here. In the first place, the flotations here of foreign securities might provide Europe with reconstruction credits on a sufficient scale to increase food purchases by its population. In the second place, as indicated in the previous section, lower money rates in our financial centers might operate to reverse the gold flow and thereby check the undermining of foreign credit systems.

The international argument could have been stated in such a way as to afford rebuttal to charges of inflation in the United States, irrespective of the rapidity of our credit expansion. In the early part of 1924 a considerable number of our banks were still deeply indebted to the Reserve Banks. Under these conditions further gold imports would continue to be applied in large degree to the reduction of reserve indebtedness instead of to an expansion in the supply of domestic credit. From an international viewpoint gold exports to the United States must not be regarded as having had significance solely as a redistribution of the world's stock of monetary gold. Instead they actually functioned as a withdrawal of so much gold from the support of the aggregate volume of credit in the world at large. To the extent that prices are determined principally by world conditions, and not solely by the narrower range of domestic factors, gold exports to the United States must encourage world price decline. To avoid sagging prices, even in our own country, the flow of gold to the United States required to be checked; and, as long as gold moved toward this country, it could be contended that there

was no inflation, no matter how rapid the rate of domestic credit expansion. If this conclusion be accepted, comparisons of the rate of credit expansion either with past secular rates of growth in domestic industry or with current conditions in trade and production become irrelevant.

In a country whose financial traditions have been as provincial as our own, this international argument must have appeared unreal and ultra-academic to many students of credit developments. But it was merely a plea that the United States do what it could to hasten the termination of the world period of currency unrest. Continued gold exports to the United States would sooner or later develop their own correctives. But, unless encouraged by banking policies, would these correctives accomplish their mission before the movement toward gold restoration should be defeated?

That gold exports to the United States contributed to weaken world prices and imports of gold from the United States to enhance prices is to be seen from an analysis of the relation between gold movements and the United States price level for recent years. Without exception, as far as the broader swings are concerned, prices tend to fall in periods when the gold movement is toward the United States and to rise when the gold flow is away from this country. In the absence of purely adventitious factors, these results would be difficult to explain except on the basis of the above-stated assumption that, from a world viewpoint, gold exports to this country tend toward world credit contraction and gold exports from this country toward world credit expansion.

Factors, more or less uncontrollable, such as short crops abroad, especially in wheat, may have been the principal causes of the improvement in the agricultural situation in the United States in the latter part of 1924. That the farmer's condition did improve, however, is

disclosed by tables XIII and XIV. The first indicates price improvement; the second, that this price improvement occurred despite a large farm production.

TABLE XIII.—UNITED STATES BUREAU OF LABOR INDEX OF WHOLESALE PRICES[1]

1924	All commodities	Farm products
July	147	141
August	150	145
September	149	143
October	152	149
November	153	150
December	157	157

[1] Old series 1913 = 100.

TABLE XIV.—PRODUCTION INDEX OF MASS OF CROP PRODUCTION[1]

Year	Average production 1910–1914 = 100
1921	100
1922	110
1923	110
1924	111
1925	112

[1] *Statistical Abstract of the United States for* 1925, p 629.

It is true that the price improvement of agricultural products did not coincide with any exceptional enlargement of exports (see Table XV).

TABLE XV

Year ending June 30	Value of total domestic exports of agricultural products,[1] thousands of dollars
1921	2,607,641
1922	1,915,866
1923	1,799,168
1924	1,867,098
1925	2,280,165

[1] *Statistical Abstract of the United States for* 1925, p 607.

Threatened reduction in the volume of exports, however, was avoided and there was some improvement over 1923.

These facts increase the difficulty of criticizing the reserve administration adversely on account of the extent to which it carried its easing measures in the second half of 1924. Unfavorable comment becomes still more difficult when the contemporary character of reserve problems and the necessity of predicting the needs of the future are recalled. Going administration cannot reason with the precision of the historical investigator. That mistakes were made most reserve officials would be prompt to admit. Governor Strong of the New York bank testified in the *Stabilization Hearings:*

> We continued to buy securities until August, 1924. I think myself, if it were to be done over again, we might have stopped a month earlier or even 60 days earlier. We might have bought $50,000,000 or $100,000,000 less.[1]

The following brief appraisal is therefore intended as a counsel for the future rather than as a condemnation of the past.

Most economic forces on the occasion of their inception operate slowly and if they continue to meet encouragement to gather momentum as they proceed. Credit expansion, for instance, may be confined at first largely to stimulating activity in the security markets and to decreasing the rate of turnover of bank accounts. At a later period, however, general commodity-price inflation may develop and tend to persist even after the impulse of liberal credit has disappeared. In similar fashion, the forces correcting an extensive gold inflow cannot be expected to develop fully of a sudden. Once underway, however, they tend to persist and may swing the pendulum far in the opposite direction.

Applying this generalization to the 1924 situation, net gold imports reached in April their peak for the year. Thenceforth they declined abruptly and with substantial regularity. In July gold imports amounted

[1] *Op. cit.*, Part I, p. 336.

to not much more than one-half the April figures. It would therefore seem proper to inquire whether the reserve administration should not at an earlier date have become mindful of the exceptional character of its 1924 activities and to have ceased to operate further in the direction of easing the money market. Should not cautious thought have weighed the danger that continued expansion measures might lead to conditions requiring a measure of restraint beyond the ability of the Reserve Banks to exercise?

To this criticism the reply could plausibly be made that in the following year (1925) the reserve administration did succeed in reducing the rate of credit expansion to a figure which might be defended by the test of the secular increase in the credit volume; and that in 1925 the Reserve Banks did impose restrictive measures when the gold inflow had turned into an outflow. But may it not be true that in 1925 the reserve administration was assisted by events so favorable as to deserve characterization as sheer good fortune?

Final answers to questions of this sort will require consideration of the conditions which contributed toward enabling the Reserve Banks to tone down the rate of credit expansion. Analysis of later periods may also throw light upon perhaps the most important single question of reserve administration: whether it is wise to stake so much upon the successful outcome of such daring policies as were operating in 1924. Does good management of the reserve system require the frequent employment of discretionary policies in the interest of what are regarded as exceptional situations? Or, on the other hand, are the occasions few in which it is necessary to deviate widely from the principle, of which more will later be said, of avoiding in any short period of time a wide fluctuation in the outstanding volume of member-bank credit?

CHAPTER III

FEDERAL RESERVE POLICY FROM THE FALL OF 1924 TO THE SUMMER OF 1927

I

The arbitrary selection of subperiods in historical summaries for the purpose of revealing distinctive tendencies is always dangerous. Especially perilous have we found this procedure in attempting to trace the recent development of federal reserve policy. All of the periods examined[1] have had much in common, and difficulties manifesting themselves at one time have been repeated at another, as well as methods of operation relied upon to overcome disturbances.

But, however this may be, some sort of chronological classification is necessary for working purposes and serves to emphasize the going character of the reserve administration's problems. Differences of degree, moreover, may become virtual differences of kind. In this light it is possible to make certain generalizations with respect to the period beginning about the last quarter of 1924 and closing with the summer of 1927. Although this period experienced many of the old, familiar difficulties, there have been few occasions on which the reserve administration experienced less difficulty in impressing its influence upon the general credit situation. Throughout this period the money market was responsive and comparatively sensitive to the activities of the Reserve Banks. Either as a consequence or as a cause of this fact, fluctuations in the outstanding volume, both of reserve and of member-bank credit, were confined

[1] Including this period with those covered in the first two chapters.

within an unusually narrow range. Stability, as well as gradual improvement, furthermore, characterized the course of industry. No marked recession in commerce or production developed in these months; in fact most indices of outputs and trade rose, by gradual degrees, to positions establishing sometime during this period new, all-time records.

Contemplation of such developments as these might easily lead to the conclusion that in this period the management of the system was relatively free from apprehensions and misgivings for the future. But such a characterization would undoubtedly be quite aside from the truth. Despite the good fortune which attended the Reserve Banks' short-run operations, it was everywhere agreed that deep-seated, perhaps revolutionary, changes were taking place in the operations of member banks and the financial methods of business organizations. Many of these changes created the greatest concern for the future, particularly because experience supplied only the most inadequate basis for measuring their strength and appraising their probable future consequences. There is no denying the perplexities occasioned by the gradual shift from demand to time deposits of member banks; by their expanding security operations; by the constant increase in street loans; by the increasing volume of installment sales; by falling tendencies in commodity prices during this period of high industrial activity; by the heavy failure record of banks serving agricultural communities; by constant consolidation in banking as well as in other business; by the definite emergency of the chain and branch-banking problem. Throughout this period also there was a great deal of legislative consideration of the desirability of altering the reserve system's methods of operation and of redefining its objectives. A bill introduced by Representative McFadden proposed to deprive

the Reserve Banks of a portion of their "war-time" functions; the Strong bill advocated that Congress direct the Reserve Banks to employ their powers in the interest of commodity-price stability; and the omnibus McFadden-Pepper bill threatened to make a political issue of the question of extending indefinitely the charters of the Reserve Ranks. This period began immediately after the daring efforts of 1924 to ease the money market for the purpose of resisting a foreign gold inflow; and even though in the years here under study, gold flows were more moderate than they had been, there was generally little doubt about the power of this country to attract gold from abroad unless effort was exerted in the contrary direction. It is true that in this period Europe made considerable progress in returning to gold; nevertheless, the period ended as it began, with reserve policy adapted to the aim of lessening the gold strain upon foreign nations.

The Reserve Banks were thus confronted by the necessity of making constant adjustments of day-to-day importance in a sea of shifting levels and uncertain currents. In such a *milieu* it would no doubt be expected that little more would be attempted than to endeavor to meet current requirements with reasonable effectiveness, thus relegating to the background the imponderables resulting from the deep-seated changes which were occurring. But while contemporary historians cannot avoid contemplation of the imponderables, interpretation must first begin with a consideration of the immediate factors in the going problem.

II. APPREHENSIONS IN THE EARLY FALL OF 1924

At the close of the summer months of 1924, the Reserve Banks' problem of maintaining close contact with the money market was serious and perplexing. Despite the lowering early in August of the New York

Bank's rate to 3 per cent, and the huge purchases of government securities which had previously been made, gold imports were continuing, even though in lessening volume.[1] A further reduction of the New York rate was out of the question, and in four of the other districts the reserve rate was as low as 3.5 per cent. At the end of August[2] total discounts in the reserve portfolios amounted to only $262,000,000. Two hundred millions more of gold imports would have tended to reduce holdings of discounted bills to an insignificant amount and to render it impracticable, with respect to relations with member banks, for the Reserve Banks to do else than lessen their holdings of government securities. The member banks could not be expected to view with equanimity a situation in which the major part of the Reserve Banks' operations should seem to represent the initiative of the system instead of the demands of country banks. In brief, the gold-absorbing powers of the system were threatened unless the demand for reserve credit was shortly to increase in marked degree.

The usual autumnal demand for additional currency might have been counted upon to prevail, but it had also to be kept in mind that soon after the harvesting season exports of agricultural products might contribute to an enhanced gold inflow. Disregarding short-lived seasonal factors, analysis of the available indices of trade and production could not lead to confident predictions of any sudden enlargement in business' demand for bank credit. For three successive months, June, July, and August, the seasonally corrected Index of Production in Basic Industries[3] held steady at the depressed figure of 94.

[1] Net gold imports were $15,000,000 in August, $2,000,000 in September, and $15,000,000 in October.

[2] As of Aug. 27.

[3] The Board's present Index of Industrial Production was not prepared until 1926.

This restriction in outputs, by reducing stocks and inventories, might have been expected to result shortly in firmer prices and thus stimulate production. But the Board's Index of Factory Employment had also fallen to a low level, and there was the possibility that the distribution of a smaller volume of wage payments in the basic industries would lessen the volume of consumers' demands and thereby tend to depress still further the general trade situation. Under conditions of declining production, the security markets, which had been utilizing much more than the usual volume of bank credit, might react sympathetically. Even a mild revival of business might not exert its customary influence in increasing the demand for bank credit. The velocity of circulation of bank deposits was low, and considerable slack could apparently be found by drawing more deeply into bank balances.

III. THE REVERSAL OF THE GOLD FLOW AND THE INCREASE IN BUSINESS ACTIVITY IN 1924 AND 1925

As future events were to develop, however, the gold movement was shortly to be reversed. In September, 1924, the gold inflow netted only $2,000,000, and in December, the first net outflow experienced since August 1920 was more than sufficient to cancel the gold imports of October and November. In the first half of 1925 successive months of gold exportations accounted for the loss of $150,000,000 of gold. For the year as a whole (1925) the net outflow was $134,000,000. This gold outflow increased, of course, the demand for reserve credit.

Coincidentally with these developments the demand for Reserve Bank credit enlarged also on account of a general improvement in industrial activity. Thus the Index of Production in Basic Industries[1] advanced

[1] Corrected for seasonal fluctuations.

rapidly from the August (1924) figure of 94 to 127 in January, 1925. Falling somewhat from the January high it held, however, considerably above the 1919 normal during the midyear and closed at 121 in December (1925). In car loadings, department store sales, and especially in the volume of building contracts awarded, 1925 was destined to display great activity.

Among the most important of the 1924 developments which paved the way for this rapid and extensive industrial recovery was a price adjustment which did much to improve the buying power of the farming classes. This is roughly indicated by comparing the Bureau of Labor's Price Index of Farm Products with its All Commodities Index.[1] Thus:

TABLE XVI.—U. S. BUREAU OF LABOR INDEX NUMBERS OF WHOLESALE PRICES

1924	All commodities	Farm products
	1913 = 100	
January	151	144
February	152	143
March	150	137
April	148	139
May	147	136
June	145	134
July	147	141
August	150	145
September	149	143
October	152	149
November	153	150
December	157	157

This price improvement of agricultural products was accomplished in the face of a large production. The corn crop was short, but the other cereals totaled a larger output than had been reached in any year since 1918. The Bureau of Agricultural Economics computes

[1] Wholesale Prices, old Index. During 1925 Farm Products lost a small part of the 1924 gain.

the following index numbers of the Mass of Crop Production since 1920.[1]

TABLE XVII.—INDEX NUMBERS OF CROP PRODUCTION

Year	Average production 1910-1914 = 100
1921	100
1922	110
1923	110
1924	111

Neither did it appear that the explanation of the price improvement of agricultural products was to be found in any freakish enlargement of exports. Thus, since 1920 the value of total domestic agricultural exports was:[2]

TABLE XVIII.—VALUE OF EXPORTS OF DOMESTIC AGRICULTURAL PRODUCTS
(Thousands of dollars)

Year ending June 30	Value of total domestic exports of agricultural products
1921	2,607,641
1922	1,915,866
1923	1,799,168
1924	1,867,098
1925	2,280,165

The real explanation seems to be that agriculture was benefiting from a better balance as between various crops and from an enlarged urban demand for food products.

But should not higher prices for farm products have been expected to lessen the power of the urban classes to purchase non-agricultural goods? If this had been the consequence, it would be difficult to show wherein the general situation had been improved.

Under the certain conditions, the above query would have to be answered in the affirmative. Given a condition of active industry and complete employment,

[1] *Cf. Statistical Abstract of the United States for* 1925, p. 629.
[2] *Ibid.*, p. 607.

given further a situation in which bank credit cannot easily be expanded, it would seem that gains of one class must be at the expense of others. If no more labor can be employed, and wages cannot be enlarged, greater payments to agriculture must lessen the laborer's ability to buy other products.

But these conditions did not prevail in 1924. Plenty of bank credit was then available for an expanded production, and there was some slack in the employment market. The increased buying power of the farmer could reasonably have been expected to result in an enlarged industrial output to meet the farmer's demands, with the probable consequence that more wages and other incomes would be distributed to the urban classes. It could further have been expected that the spending of these incomes would occasion in turn enlarged production for the urban classes. It might thus have been anticipated that the final result of the enhanced farm prices would be increased industrial activity, with a concomitant expansion in bank credit. If at the same time the volume policy of industry could have been foreseen, it would not have had to be predicted that the level of prices would rise. The improvement of agricultural prices in 1924 was not a development necessarily inconsistent with general revival.

Other favorable factors pertained to the situation in special industries. Building had by no means made up for the shortages developed during the World War, and the railroads had been effecting such economies in management that a more vigorous policy could be anticipated with respect to purchases of locomotives and rolling stock. The open-market policy of the Reserve Banks was favoring the flotation of securities for these purposes. Finally, the depressed production of the summer had resulted in the working off of considerable stocks on hand. This reduction in inventories,

it is true, was not displayed in department store stocks. But much evidence was available that further back, in the hands primarily of producers and manufacturers, much had been done to lessen surplus stocks.[1]

It is not possible to determine the extent to which the reversal of the gold flow is attributable to sheer good fortune and the extent to which it was due to the policies of the Reserve Banks. Much of it did represent the influence of favorable monsoons in India, where a succession of abundant harvests increased the purchasing power of the Indian consumers. But the tendency of bill rates in New York to remain below similar money rates in London; the withdrawal of gold to Germany as a result of the successful consummation of the Dawes plan; the huge flotations of foreign securities in this country; the increased confidence in the gold values of foreign currencies; all played their part and all had been assisted by the activities of the Reserve Banks. In large measure, at least, the Reserve Banks were entitled to reap the reward of their 1924 policy.

IV. THE RESERVE CREDIT PROBLEM AFTER THE LATE SUMMER OF 1924

With temporary success realized in the spring and summer of 1924 in stemming the gold inflow, it might be surmised that any subsequent gold exports and any increased activity of business would have been permitted to exercise their normal tightening effects upon the money market. Majority opinion at the time probably did not anticipate that the Reserve Banks would attempt to provide a complete offset against the restrictive influences of possible gold exports and

[1] The election of Mr. Coolidge by a large plurality and the failure of the insurgent group headed by La Follette to make greater inroads in Republican ranks probably served to increase confidence in the circles of enterprise. Whether it was fortunate that this was so is not for us to seek to answer.

increasing seasonal and cyclical credit demands of trade. Everywhere it was agreed that money was easy and there was a general tendency on the part of financial analysts to predict that the stage was being set for another era of commodity-price inflation. Some tightening of the money market, assuming that business recovery continued, would undoubtedly have been viewed with equanimity.

But there was considerable debate about the extent to which it would be desirable for money rates to harden. The pound had not yet been restored to \$4.86; in fact at the turn of the year cable-transfer rates had not passed \$4.73. Even this figure undoubtedly included a large element of speculation. Until the pound had been definitely stabilized in relationship to the dollar, a policy of dearer money on this side was open to criticism.

The gold exports, moreover, had not been of such a character as to indicate that the direction of flow had been permanently reversed, and to this extent the early 1924 situation, which led to the easing measures, had not been completely changed. It is true that the volume of our gold exports had been large, amounting between December and April (inclusive) to \$175,000,000. But special factors were very largely responsible for this outflow. For instance, in December (1924) exports of gold to Germany amounted to \$20,000,000; and in January, to \$17,500,000. With two negligible exceptions these were the first exports to Germany since the armistice,[1] and they were attributable to the successful flotation of the "Dawes" bonds in October. This gold went largely into the reserves of the Reichsbank. East India was also the recipient of much of the gold exports of these months. As previously indicated, India had been having a succession of good harvests and the demand for gold in that country had been stimulated by

[1] *Federal Reserve Bulletin*, March, 1925, p. 169.

the high rate of the rupee exchange. Furthermore, imports of gold from England had been giving way to exports. But there was no evidence to indicate that the power of the United States to attract gold had been definitely lost.

The desire for considerably tenser money conditions was based therefore principally upon domestic developments. Herein the chief concern grew out of the rising tide of security operations. The Standard Statistics Company's index of 202 industrial stocks[1] rose in monthly averages from 113 in November to 125 in January, and share turnovers hovered about the, then, high figure of 1,750,000 or 2,000,000. Speculative developments, in their relation to reserve credit activities, had at this time not received such complete scrutiny and attention as in later years; nevertheless in one respect the high volume of security dealing was peculiarly embarrassing. Security trading is concentrated very largely in New York City, and throughout the system the 1924 easing measures were generally referred to as the "Strong"[2] policy. Misinterpretation of motives was easily possible, with perhaps unfortunate legislative consequences.

But misgivings springing from the security market's use of bank credit were tempered in the anxiety not to impose premature credit checks upon industry whose recovery from the low depths of 1923 and 1924 had by no means been assured. And in so far as public relations mattered, a higher discount rate in New York—perhaps required to bring its rate into line with other Reserve Bank and open-market rates—while possibly of no great practical consequence, might be satisfying. The outlook toward the close of 1924 was for a mild upward adjustment of discount rates.

[1] *Ibid.*, p. 156.

[2] Benjamin Strong was then governor of the New York Reserve Bank.

V. THE CREDIT POLICY OF THE RESERVE BANKS IN THE FALL OF 1924 AND THE SPRING OF 1925

It is never easy to ascertain the intentions of the reserve administration merely by scanning discount and acceptance rate schedules and figures of the various classes of Reserve Bank earning assets. The demand for reserve credit by member banks may, at least for a short period of time, be too strong to be within the practicable control of the Reserve Banks, and, on the other hand, easy rates may not induce a reluctant market to increase its borrowings to the desired extent. Furthermore, fluctuations in the outstanding volume of reserve credit report variations in the seasonal demand for credit and may not indicate whether from a longer time point of view the use of reserve credit is being restrained or encouraged.

The months we are examining offer exaggerated difficulties of analysis because they include the fall crop moving and the Christmas shopping season on the one hand and, on the other, the January and February weeks of relaxation. In the late fall and early winter seasonal requirements normally reverse themselves with startling rapidity. It must also be remembered that the cyclical improvement in business was exceptionally strong in these months and thus added another factor of variation in the demand for reserve credit.

But despite these complications, one aspect of the problem rendered the difficulty a little less serious than it otherwise would have been. Experience had already shown that shifts in the demand for reserve credit are primarily attributable to changing currency requirements. Member-bank reserve balances do not ordinarily fluctuate within wide limits. When member banks demand a greatly enhanced volume of reserve accommodation, the major causes are to be found in the growing currency requirements of the public and in gold exports.

Currency withdrawals from member banks tend to lead member banks to apply for reserve accommodation to an amount substantially equal to their cash losses. An increase in the business demand for credit, however, makes it necessary for member banks as a whole to increase their reserve balances by only a fractional portion of their enhanced deposits. Member banks' reserve balances are therefore relatively stable and reveal comparatively little of seasonal influences.

If at the present time (1930) one should scan the booklet of charts prepared by the Federal Reserve Board he would note that two curves show substantially the same shape. Regularly in the last quarter of the year the curve of Reserve Bank credit shows an upswing and later at the turn of the year a descent closely paralleling that of the curve representing the amount of money in circulation. Inasmuch as our present problem covers this season of the year—the late autumn and early winter—it might be surmised that to ascertain the policy of the Reserve Banks we have only to note whether the fluctuations in the supply of reserve credit corresponded with changes in the volume of money in general circulation; that is, outside the Treasury and the Reserve Banks.

But while such procedure might be reasonably conclusive at the present time it must be remembered that in 1924 and 1925 the Reserve Banks had relatively little experience regarding the normal last-quarter strain. Few precedents from the war and crisis period hold for later times, and during 1922 and early 1923 industry was reviving with amazing rapidity. It would be difficult indeed to estimate how much of the additional demands of the last quarter of 1922 was attributable to seasonal instead of cyclical influences.

With these complications in mind regarding the employment of statistics to reveal the longer time aims of

the Reserve Banks, we may consult the following figures. They show the extent to which changes in the amount of money in circulation paralleled increases in the total of reserve credit and in the country's gold holdings.

TABLE XIX.—CURRENCY MOVEMENTS AND RESERVE CREDIT

	Increases (+) or decreases (−) from preceding month in			
	Total bills and securities held by Reserve Banks[1]	Country's gold holdings[2]	Total bills and securities plus country's gold holdings	Money in circulation[3]
	In thousands of dollars			
1924				
October	+ 66,139	+ 15,577	+ 81,716	+ 78,329
November	+ 89,867	+ 13,173	+103,040	+110,431
December	+107,554	− 29,401	+ 78,153	− 4,482
1925:				
January	−220,435	− 68,488	−288,923	−245,105
February	+ 95,459	+ 46,998	+ 48,461	+ 50,871
Total changes from October, 1924, to February, 1925, inclusive	+138,584	−116,137	+ 22,347	− 9,956

[1] Obtained by subtracting month-end figures from those of preceding month end, as reported in the *Annual Report* of the Board for 1925, p. 48

[2] These figures are net monthly exports (−) and net imports of gold For finer comparison they should make allowance for earmarkings, domestic production, and shifts of gold from monetary to industrial uses Adjustments on these accounts would make no considerable difference for the months under review

[3] Changes in end-of-month figures as reported in the *Annual Report* of the Board for 1928, p. 91.

For these five months as a whole the Reserve Banks added $22,000,000 of reserve credit to the market in excess of net gold losses. Since, however, $10,000,000 were returned from circulation, the figures show an improvement in member banks' cash position of about $32,000,000. The figures cited certainly do not indicate any sharp reversal in the easing policies of 1924.

The next evidence to consult in determining the intentions of the reserve administration consists of changes in the relative position of the various classes of

earning assets in Reserve Bank portfolios. During November, 1924, holdings of government securities increased a few millions over October, but from October to February the government security portfolio decreased about $200,000,000.[1] But this decline was more than matched by increases in discounted bills and purchased acceptances. The reduction in holdings of governments may very well have indicated no more the desire to lessen the total volume of reserve credit than the belief that it would be preferable for earning assets to consist more largely of paper, the acquirement of which is supposed to reveal principally member-bank, rather than Reserve Bank, initiative.

But discounted bills and acceptances may have been presented in larger volume than was acceptable to the Reserve Banks. Quickness of the Reserve Banks to increase discount rates, to discourage such applications as rapidly as money-market conditions permitted, might therefore throw light on Reserve Bank intentions. As far as discount rate changes are concerned, only two Reserve Banks acted between October and the close of February. Minneapolis lowered its rate from 4.5 to 4 per cent on Oct. 15, 1924. New York increased its rate from 3 to 3.5 per cent on Feb. 27. The Minneapolis Bank had at the time of its action the only rate as high as 4.5 per cent, and New York the only rate as low as 3 per cent.

Several weeks previous to the New York reduction, developments had indicated that the reserve rate in that center was too low with respect both to other domestic and to foreign rates. Early in December the New York reserve rate could have been put up to 3.5 per cent without violating the "rule" of keeping the reserve discount rate between rates on 90-day acceptances and on prime 4- to 6-months commercial paper. With

[1] In average daily holdings for the month.

regard to the relationship with other districts, the *Bulletin* for December[1] pointed out that the growth of bankers' balances (attributed elsewhere to lesser commercial demand for credit in agricultural sections than anticipated) had not been nearly so rapid in New York as in other domestic financial centers. With reference to London, rates were clearly lower in New York on similar classes of paper and had been for half a year. The *Bulletin* for February 1925[2] referred to this fact as "an influence in diverting a large volume of foreign borrowing from the London to the New York market."

We have put ourselves to some pains to show that there was no great haste to effect the transition from the exceptional ease in the money market in the summer of 1924 largely because of the precedent which this fact may have supplied for later periods. The fact that vigorous measures of restraint did not seem to be required in 1925 to counteract the easing measures of 1924 may have encouraged the Reserve Banks to repeat the daring policies of 1924 under the, in some respects, quite similar conditions of 1927. And the fact that vigorous restraining measures were not required in 1925 may have made the Reserve Banks more content with mild restrictive measures in the spring of 1928. To the gentle restraints of 1928, in turn, no small share of the cause of the catastrophic stock-market decline in 1929 may perhaps be attributed.

VI. FEDERAL RESERVE OPERATIONS FROM THE SPRING OF 1925 TO THE END OF 1926

After February, 1925, credit and financial developments were not such as shortly to occasion vigorous employment of Federal Reserve powers either in the direction of alleviating or of restraining the use of credit.

[1] P. 903.
[2] P. 99.

This tranquility in reserve circles was due in large measure to the steadiness in the gradual growth of the country's gold stock. Thus:

TABLE XX.—MONETARY GOLD STOCK OF THE UNITED STATES
(Thousands of dollars)[1]

Month	End-of-month figures	Increase over preceding month
1925:		
March	4,346,144	−23,245
April	4,349,762	+ 3,618
May	4,361,234	+11,472
June	4,364,632	+ 3,398
July	4,370,119	+ 5,487
August	4,382,751	+12,632
September	4,381,538	− 1,213
October	4,407,476	+25,938
November	4,397,440	−10,036
December	4,399,425	+ 1,985
1926:		
January	4,411,624	+12,199
February	4,423,164	+11,540
March	4,441,550	+18,386
April	4,438,158	− 3,392
May	4,433,389	− 4,769
June	4,447,397	+14,008
July	4,471,115	+23,718
August	4,473,123	+ 2,008
September	4,465,760	− 7,360
October	4,473,447	+ 7,687
November	4,476,628	+ 3,181
December	4,492,060	+15,432

[1] *Annual Report of the Federal Reserve Board for* 1927, p. 77.

The total gain from the beginning of March, 1925, to the close of December 1926, was in round numbers $122,000,000. Although in 1925 the Treasury withdrew from circulation about $50,000,000 of National Bank notes, an increase, from Mar. 4, 1925, to Dec. 30, 1926, of $100,000,000 in member-bank reserve balances,

required relatively little aid from the Reserve Banks. The principal adjustments in the volume of reserve credit were required on account of seasonal fluctuations in the demand for currency.

On the basis of this expansion of reserve balances all member banks were able to increase their total loans and investments between Apr. 6, 1925, and Dec. 31, 1926, from $29,200,000,000 to $31,800,000,000. Measuring the increase from Dec. 31, 1924, to Dec. 31, 1926,[1] we find an expansion of member-bank loans and investments of $2,870,000,000, an annual rate of increase of 4.9 per cent. The per annum rate of increase in total member-bank deposits in the same period was 3.5 per cent. Particularly in view of the improving tendencies in trade it would be difficult to find an authoritative doctrine which would assert that such a credit expansion was highly excessive with respect to the physical accomplishments of industry.

To realize these results it was not necessary for the Reserve Banks to make a liberal offering of their credit. In November, 1925, four Reserve Banks increased their discount rates from 3.5 to 4 per cent. After the turn of the year the New York rate was also increased by 0.5 per cent, establishing for the system a uniform schedule of 4 per cent. In 1926 the only discount rate changes effected were at the New York Bank. On Apr. 23, the New York rate was reduced to 3.5 per cent, but on Aug. 13 it was again brought back into line with the 4 per cent rate prevailing elsewhere. During the same period of time, holdings of United States securities were held relatively constant.

The reduction in the discount rate in the spring was supported by the purchase by the reserve system of $65,000,000 of United States securities in the open market, and the advance in August was

[1] In order to compare conditions on dates occupying similar seasonal positions.

followed by a gradual reduction of $75,000,000 in the system's open-market investment account.[1]

Aside from these and a few other minor adjustments little change took place in Federal Reserve Bank operations during these months. Industry and commerce were developing satisfactorily and gold flows were not exceptional.

VII. INTERNATIONAL MONEY-MARKET DISTURBANCES IN 1927

Despite the tranquility that prevailed in Federal Reserve circles in 1926 many elements in the business situation had been slowly developing some concern. In the first half of 1927 the continuation of these tendencies created much apprehension and division of opinion among various administration officials of the system. During the winter and spring no really vigorous attempt was made to employ reserve powers to modify greatly the general credit situation. But in the summer of 1927 sentiment favoring easing measures prevailed along lines of analysis somewhat similar to those which had emerged in 1924.

The inward gold flow was the principal factor in the development of the opinion supporting alleviating policies. For 1926 as a whole net imports of gold had not been apprehensively large, amounting in round figures to $97,000,000. But immediately after the turn of the year gold imports increased tremendously. In January, 1927, the country's monetary gold stock[2] increased more than $70,000,000, in February by an amount exceeding $20,000,000, and in March and April by

[1] *Annual Report of the Federal Reserve Board for* 1926, p. 3.

[2] Changes in monetary gold stock are due not only to exports and imports of gold but also to earmarkings for foreign account, withdrawals from earmark, changes arising from domestic production of gold, movements of gold into and out of use in industry and the arts and in foreign gold holdings of the Reserve Banks.

more than $10,000,000 each. For the four months net additions to the country's monetary gold stock thus exceeded $110,000,000. At the close of April, 1927, the country's monetary gold stock topped the previous peak reached in August, 1924, by almost $90,000,000.

In relationship to these changes in monetary gold, wholesale prices moved in much the same manner as during the gold imports of 1923 and 1924. On January, 1926, the Bureau of Labor's Index stood at 104, the highest point reached since March, 1923. Thenceforth during 1926 and the first half of 1927 the Bureau of Labor's Index moved downward as follows:[1]

TABLE XXI.—U. S. BUREAU OF LABOR'S ALL COMMODITY PRICE INDEX NUMBERS

1926				1927	
January	104	July	100	January	97
February	102	August	99	February	96
March	100	September	100	March	95
April	100	October	99	April	94
May	101	November	98	May	94
June	101	December	98	June	94

In this decline the Farm Products and Foods group, consisting of articles which bulk so large in international trade, shared proportionately. From January, 1926, to June, 1927, the Farm Products Index fell from 107.4 to 96.5 and Foods from 102.6 to 94.4. Gold imports and commodity prices were thus repeating their 1924 relationship. Again, within and without the system, the opinion was repeated that foreign exports of gold were lessening the buying power of Europe, that this impairment of European purchasing power was tending to weaken the prices of important articles of foreign commerce and contributing sympathetically to weakness

[1] New series, 1926 = 100.

in other price groups. Foreign financial observers were proclaiming that a large portion of the gold dispatched to the United States was being virtually sterilized in the vaults of the Reserve Banks and thus represented not so much a shift from other countries to the United States as a subtraction from the world's monetary stock. In support of this assertion it could be pointed out that in the first half of 1927 the outstanding volume of reserve credit, after the return cash flow in January, hovered around $1,000,000,000, substantially the lowest figure, save for a few weeks in 1925, since the late summer of 1924.

In so far as economic analysis prevailed, a strong case could have been made, in early 1927, in support of the theory that easing of the credit market was required on this side in order to lessen the intensity of credit contraction in the gold-standard world. It was admitted, of course, that in several respects the case for further easing was not quite so clear as in 1924. In the first place, unlike 1924, 1926 had not been a bad year industrially. In September, 1926, the Board's seasonally adjusted Index of the Physical Volume of Industrial Production reached 114, exceeding all past records. This index carried back to July, 1924, would have stood at 84. In no month of 1926 had it fallen below 107. During the first half of 1927 the production index continued at an average level approximating that of 1926. As a second dissimilarity with 1924, the total volume of discounted bills in reserve portifolios was about $100,000,000 less at the end of 1926 than at the close of 1923. Any considerable increase in purchases of government securities in 1927 would therefore have had to overcome even to a greater extent than in 1924 the objections which inevitably arise when outstanding reserve credit is largely represented by paper, the acquirement of which seems to depend principally upon reserve-, and not upon member-bank, initiative.

The high volume of industrial production in 1926 had been accomplished, however, in the face of generally falling prices. Furthermore, wage rates had remained high, possibly as a partial consequence of which unemployment seemed to be gradually increasing.[1] Commonly in business circles there was a disposition to characterize the situation as "prosperity without profits." From the standpoint of the industrial outlook it was undoubtedly true that 1926 did not differ quite so much from 1924 as Indices of the Physical Volume of Trade and Production seemed to report.

In 1924 reserve easing measures were admittedly based largely on the desire to aid England to return to gold. With the pound's par once more fixed at $4.86 it might seem that this factor was removed from the problem in 1927. But in latter 1926 and early 1927 sterling exchange remained consistently below $4.86 and New York Stock Exchange time-loan rates tended to remain above London bill rates. This differential in favor of New York operated to attract foreign liquid funds so that at the close of 1926 the Department of Commerce estimated that total balances held by foreign banks on deposit in this country were about $3,000,000,000 larger than at the beginning of the year. On the basis of information at its command, the Board expressed the opinion in the *Bulletin* that a further movement of funds to the United States from abroad had taken place during the first half of the year.[2] There was therefore reason to believe that the same necessity existed in 1927 for assisting London to maintain the pound at the prewar dollar par as prevailed in 1924 for helping England to lift the pound to that point.

[1] For a thorough discussion of this question, see Sumner H. Slichter, Market Shifts, Price Movements, and Employment, *American Economic Review, Supplement*, March, 1929, pp. 5–22.

[2] *Federal Reserve Bulletin*, September, 1927, p. 630.

But the principal embarrassment to London had not been occasioned by events in which the United States played a leading part. Since the middle of 1926 French operations had been to England, as also to Italy and Belgium, the principal source of apprehension. In order to show the startling reversal of France's position in world finance, it will be helpful to review a few of the events which preceded the franc's stabilization.

In none of the depreciated-paper countries of Europe had events of the first half of 1926 been more discouraging than in France.

Turning our attention southward, it will be recalled that in December of 1925 the Italian Chamber of Deputies had approved the American war debt agreement, and immediately the Mussolini government began to initiate stern financial measures. At the end of the first half of 1926 revenues were exceeding expenditures and in the fall of the year debt retirement was undertaken under the vigorous form of currency contraction. The determined efforts of the Mussolini government seemed at least to insure that the collapse of the lira was to be avoided.

In Belgium, in the north, stabilization measures had been under serious discussion since the spring of the year. On Oct. 25, 1926, the Belgian Government made effective a plan of monetary reform wherein the new belga was created with a ratio to the paper franc of one to five.

In Central Europe, Austrian and Hungarian stabilization had been so far completed in the summer of 1926 that the Jeremiah Smith Commission terminated its existence on the ground that its services were no longer required.

In France, however, during the first half of 1926, the franc had progressively weakened, falling to 2.66½ cents on July 1. On July 20, immediately after the fall of the Herriot ministry, the franc was at 1.93¾ cents. The

experts' recommendation that the Berenger debt agreement be ratified had not been adopted and with the failure to ratify the debt agreement the opportunity to obtain in the United States credits believed to be necessary to stabilize the franc seemed at least momentarily lost. The budget was not in balance and no government advocating essential new taxes seemed able to survive. The outlook in the midyear was for the continued flight of capital abroad and for the further depreciation of the franc.

But with the ascent of the Poincaré government at the close of July, the entire situation was destined to reverse itself. Poincaré immediately sang the note that France must save herself, that the franc must be raised and stabilized without resort to foreign credit or foreign loans. A few days after Poincaré's designation as premier, the franc had risen to 2.50 cents. By December the franc had recovered all the external loss of value suffered in the first seven months of 1926.

In presenting his fiscal bill to the Chamber on July 27, 1927, Poincaré failed to specify the rate at which the franc should finally be stabilized. No government which refused to offer hope of some appreciation could have survived the displeasure of French bondholders. Pessimists took the view that even *de facto*, not to speak of *de jure*, stabilization must be remote on the ground that a program which would suggest that the franc could not be lifted to more than a fraction of its prewar gold value would prove thoroughly unacceptable to the French creditor classes.

But economic events went far to decree first a temporary, and later a permanent, stabilization. The decline and the recovery of 1926 had both been rapid and the danger developed that a further sharp rise would dislocate the internal price structure and disturb foreign trade. At the close of the year the government accepted

the opinion that a period of temporary stabilization at least was desirable and that the endeavor should be made to affix the franc at rates then prevailing, about 124 to the pound, and 25 to the dollar. To give effect to this determination the Bank of France undertook to buy all foreign exchange offered at the rate of 23.55 francs to the dollar and to sell exchange at 25.57. Under this system the zone of exchange fluctuations was confined within these limits and was controlled by the government. It is now known, of course, that this *de facto* rate became approximately the *de jure* rate.

The return flight of foreign capital, once confidence in the future of the franc was assured, proved so strong, however, that it was the power of the Bank to purchase, instead of to sell, exchange which was tested. As the Bank purchased foreign credits or securities its foreign holdings grew, while in France its note issues expanded. It might have been expected that the expansion of the Bank of France's note-issue circulation would have operated to depreciate the internal value of the franc and thus restrict the return flight of capital. But heavy taxes resulted in the Treasury's reabsorbing large quantities of franc currency from circulation, and the Treasury turned these back to the Bank in repayment of its debt. In this way bank-note expansion was avoided to such an extent that the return movement of French capital was not checked.

The note operations of the Bank were sufficient, however, to avoid any tightening of the French money market so that private discount rates in Paris, which were reported as high as 7.25 per cent in October, 1926,[1] had fallen to 3.17 per cent in April, 1927, after which the monthly averages were destined shortly to drop below 2 per cent. With this weakening of private rates the Bank of France was virtually forced to lower its rates

[1] *Cf. Annual Report of the Federal Reserve Board for* 1927, p. 100.

so that the 7.5 per cent rate of August, 1926, was reduced at bimonthly intervals to 5 per cent on Apr. 14. London, the traditional center of world finance, was confronted with the prospect of having to operate under dearer money rates. It is not surprising therefore that the Bank of England reduced its rate a week later, Apr. 21, from 5 to 4.5 per cent at which point demand sterling in New York was weak a point or so above $4.85. Pressure was thus put upon New York to effect a similar reduction.

But the principal consternation resulting from the return of French capital had to do with the Bank of France's enormous gold holdings abroad rather more than with the declining tendencies in Paris money rates. Quoting from the *National City Bank Bulletin* for July 1927:[1]

> Reckoning the franc at 25.5 to the dollar, these holdings would amount at the minimum to $600,000,000 on June 9, and were accruing at the rate of about $30,000,000 per week. And that is after the payment of the debt of $165,000,000 to the Bank of England.
>
> The situation is anomalous; no banking institution ever held such a commanding position in foreign money markets. Obviously if the Bank should conclude to make large transfers of gold to Paris the effects might be serious, and while it is quite certain that the French authorities would not want to disturb the international equilibrium, the situation has excited much interest and some anxiety in London, the market most immediately involved. French dealings in foreign exchange are mainly conducted through London, and that market works upon a relatively small gold reserve, considering the variety and volume of its transactions. Moreover London's position in the past year has been one of uncommon difficulty, and the market has been sensitive to the loss of reserves.

In the light of these foreign developments it is not therefore difficult to understand the growth of sentiment among reserve officials in early 1927 in favor of easing measures. Lower rates in New York might help to

[1] P. 116.

restore confidence in European countries confronted by the "French gold peril" and indirectly increase the foreign demand for American agricultural products.

VIII. THE DELAY IN THE RATE REDUCTIONS OF 1927

As would be expected, the English and Italian press expressed only alarm and denunciation on account of the French gold withdrawals in London. In the United States the opinion was also popular that the accumulation of gold deposits had been planned by the Poincaré government in order to gain power to compel the modification of American debt terms. Prior to his ascent to the premiership in the middle of 1926 Poincaré had been an outspoken critic of the Berenger pact.

However this may be, there is no evidence that French banking authorities were acting for the purpose of creating any unnecessary embarrassment to other gold-standard nations. Reserve officials have generally testified that the Bank of France acted in a most cooperative manner with our Reserve Banks and sought in every feasible way to lessen the shock which their withdrawals might otherwise have created. At any rate, the reversal of the franc's position after Poincaré's ascent can easily be traced to well-understood financial developments. England since 1925 has constantly been in trouble because it chose to stabilize at the old par before it was clear that the pound's internal value justified any such rate. Undoubtedly English opinion in early 1925 was unduly optimistic in holding that there was little of anticipated speculative value in a pound fluctuating around $4.70. On the other hand, despite its greater difficulties in revenue operations, France did not stabilize prematurely, and later events seem to prove that the franc, in the middle of 1926, had been unduly depressed by speculative belief in further

depreciation. Once the budget was balanced under the vigorous measures of Poincaré, the return of French capital was inevitable, and the franc could undoubtedly have been stabilized at a higher figure than four cents.

The whole problem of the scramble for gold was, however, difficult and complicated and formed the proper subject of direct personal discussions by the heads of central banking systems, the holding of which among European central bank officials had been a more or less regular feature of the prewar era. Previous to 1927, Governor Strong of the New York Bank had made a number of pilgrimages to Europe, the last being in April, 1926, at which time Belgian stabilization was reported to have been the principal subject of conversation. In the winter of 1927, however, Governor Strong was in bad health and it was on this account, according to the comments of the press, that the 1927 meetings were held in this country. In late June and early July Dr. Hjalmar Schacht of the Reichsbank, Charles Rist and M. Ricard of the Bank of France, and Montagu C. Norman of the Bank of England engaged in various conferences both with officials of the Reserve Bank in New York and with members of the Board in Washington. Public statements announced that at these conferences the whole subject of international financial relationships was discussed.

The consensus of opinion, if any was reached in these conferences, was not made public, but in a short period of time the expected discount-rate reductions began to be made. The Kansas Bank surprised the public by announcing the first reduction to 3.5 per cent on July 29, but in August seven and in September the remaining four Reserve Banks effected a similar schedule. This was the occasion on which the controversy arose between the Board and the Chicago Reserve Bank regarding the Board's power to initiate discount-rate changes.

On the part of a great many economists the summer reductions were objectionable not on the ground that they never should have been effected but that they should have been made a half year or so earlier. So far as the country's industrial situation was concerned the events of the half year did not alter radically the country's economic condition. Every month in the first half year of 1927 the Board's Index of Industrial Production stood at 107, or above, a figure not far removed from the 1926 average. Wholesale prices continued to drop in early 1927, but even at the end of 1926 the decline in the Bureau of Labor's Index had been proceeding more or less regularly from the temporary peak reached in November, 1925. On the other hand, July, 1927, was too late a month in which to defend the rate reductions from the standpoint of resisting gold imports. After April, gold losses were suffered which by the close of July had reduced the country's monetary gold stock by $30,000,000.[1]

But the principal indictments of the delay in effecting the rate reductions had to do with the course of member-bank credit and security speculation. Despite the high level of production in 1926, most indices of stock prices closed the year at about the same level as prevailed at the beginning of the year. Largely on account of the spring slump in the stock market the reporting member banks during 1926 increased only insignificantly their loans secured by stocks and bonds. During the greater part of 1926 total loans and investments of reporting member banks expanded at a less rapid rate than was "normal" for postwar developments,[2] while from the end of the first quarter of 1927 the rate of expansion more or less regularly increased to almost twice the "postwar" normal by the middle of 1927. Any comprehensive

[1] *Report of the Federal Reserve Board for* 1927, p. 77.

[2] According to Carl Snyder's unpublished calculations.

backward comparison of 1926 and 1927 domestic developments would suggest that the rate reduction could have been accomplished more effectively in the early, than in the middle, months of 1927.

Personal interviews of the writer convinced him that the desirability of rate reductions early in 1927 was accepted by a large faction influential in Federal Reserve circles.[1] But in a banking system with so complicated an administration as the Federal Reserve, it is to be expected that much delay must frequently be encountered in securing the desirable unanimity of opinion. Particularly true must this be if foreign, instead of domestic, credit developments provide the principal argument for the change.

Despite the apparent success of the 1924 operations, any reserve policy which could be traced to foreign developments must be entered into most reluctantly by those responsible for the administration of the reserve system. There is not the slightest question about the keenness with which critics pick up any trace of possible subserviency to foreign banking interests. In 1925 the establishment of a gold credit by the Reserve Banks to help guarantee the pound's return to par gave rise to the most acrimonious criticism,[2] and in 1926 and 1927 every foreign operation was dissected with a similar end in view. In August, 1926, Assistant Secretary of the Treasury Winston found it necessary to issue a denial[3] of the reports that the Federal Reserve Bank of New York had been making secret loans to the Belgian and French governments. The

[1] For a contemporary article advocating a lowering of discount rates at that time, see O. M. W. Sprague, Lower Discount Rates May Prove Advisable in 1927, *New York Times Annalist*, January, 1927, pp. 41–42.

[2] Former Assistant Secretary of the Treasury Oscar T. Crosby was one of the adverse critics. *Cf. Commercial and Financial Chronicle*, May 23, 1925, p. 2595.

[3] *Cf. Commercial and Financial Chronicle*, Aug. 28, 1926, p. 1041.

tendency of departed French capital to return home in 1926 and 1927 developed so suddenly that the situation was admittedly full of dynamite. On this account the reluctance of reserve officials to make complete explanation of the emergence on the New York Bank's balance sheet of the item "gold held abroad" is easily understood.[1] It required a great deal of accounting ingenuity on the part of the public to determine the innocent details of the various transactions occasioned by the purchase of French gold in London.

Further explanation of the delay in rate reductions is undoubtedly to be found in lessened apprehension regarding the continued increase in security activities and in the security market's use of bank credit. The abatement of unwillingness to undertake easing measures at a time in which speculative interest was developing is, of course, difficult to explain from a backward point of view. In the summer of 1927 the conditions complained of had increased in volume and intensity over those prevailing at the beginning of the year. Between Jan. 1 and July 1 loans to brokers and dealers by New York City Reserve member banks increased some $200,000,000 and the New York Reserve Bank's June, 1927, Index of Shares Sold on the New York Stock Exchange rose 60 points above the January index (219-159). Colonel Ayers has plotted the course of 100

[1] In April, 1927, the Bank of France paid off a debt of approximately $160,000,000 to the Bank of England, a debt which had still several years to run. This payment released some $90,000,000 in gold collateral which the Bank of France began to ship to New York. After $30,000,000 had thus been shipped, however, the Federal Reserve authorities, unwilling to absorb further large quantities of gold into their reserves, purchased the remainder and retained it in London as a special reserve. The purchase was made with New York funds. The uses of this credit by the French authorities would have operated to soften money rates. Accordingly the Reserve Banks sold to the market a roughly equivalent sum of government securities. *Cf.* F. Schneider, Jr., Powerful Factors at Work in the International Market, *Journal of American Bankers Association*, June, 1927, pp. 900–923.

leading dividend-paying stocks on the New York Stock Exchange in such a way as to show that in July prices were so high as to lower dividend yields more than 0.5 per cent from the averages prevailing at the beginning of the year.[1]

But familiarity with danger breeds resignation, and as industrial progress did not appear to be suffering from the diversion of funds to the security markets, apprehensions became less intense. In the security markets themselves misgivings bred by the spring reaction of 1926 tended to disappear with the subsequent lifting of values. Despite the heart burnings that the security market's use of bank credit was creating, it is undoubtedly true that the tendency developed more and more to regard speculative events as holding a less direct relationship to future prosperity than productive accomplishments, commodity-price movements, and foreign gold flows.

It should also be kept in mind that political developments pointed toward the desirability of postponing action in the very early part of 1927. The McFadden Act extending Federal Reserve charters, and liberalizing National Bank powers, did not become law until Feb. 25. The House Currency Committee was continuing to hold hearings on the "stabilization" question, but the movement of prices indicated the need more and more of easing, instead of restrictive, measures. Of principal importance, however, explanatory of the postponement of rate reductions until the summer of 1927 the writer would regard the delay almost always required in the complicated reserve organization to secure the desirable unanimity of opinion. Delay on this account sometimes prevents action until action becomes unnecessary and therefore strengthens the case of those who advocate the unpopular cause of

[1] *Cf. Cleveland Trust Company Business Bulletin*, Nov. 15, 1929.

finding a more or less automatic guide to reserve policy of the sort which will give an early indication of the need of remedial measures. But all this makes it necessary to inquire somewhat more closely in the period under survey about relationships between the various district Reserve Banks.

IX. INTER-RESERVE BANK RELATIONSHIPS

Thus far in our discussion the Reserve Banks have been considered more or less as constituent parts of a single system and it has been assumed that effective machinery existed for formulating policies on the lines of national importance. Such a point of view is necessary in any brief description of Reserve Bank activities. But if analysis is to approach realism it must somewhere take account of possible divergence of opinion and self-interest among the different Reserve Banks.

It is, of course, easy to understand how after the summer of 1926 the Reserve Banks operating in the country's central money markets must have felt the greatest interest in the foreign developments that have been outlined. Gold flows in particular are a part of the day-to-day, week-to-week, and, as Dr. W. Randolph Burgess has lucidly shown,[1] even hour-to-hour concern of the New York Reserve Bank. The New York Bank operates in the money market that immediately gains funds by gold imports and loses funds by gold exports. For the New York Bank to refuse to offset gains or losses in the New York money market would ultimately create tenser or easier credit conditions the country over, but, nevertheless, the first effects would be felt in New York, It is more or less inevitable, therefore, that the Reserve Bank in the central money market will generally operate in the direction of steadying credit conditions in that market, and to the extent that it does, internal credit

[1] *Cf* "The Reserve Banks and the Money Market." Chap. IX.

conditions are not seriously affected. The question therefore arises as to how the interest of interior Reserve Banks could be stimulated in the foreign gold scramble.

Part of the answer to this question is of course to be found in the organization machinery provided by the act itself. The Federal Reserve Board was set up for the purpose of providing an agency of harmonization and cooperation among the various district banks, at least in situations in which national interests are at stake. But from the point of view of morale within the system the Board's influence would be restricted, no matter how clear its legal powers, unless reserve activities in the central money markets are viewed as a part of the direct concern of the interior banks. How then, in the period we are considering, did the Reserve Banks in the interior develop this interest?

As they operated day by day, it must have been constantly borne in on the interior Reserve Banks that the effectiveness of their operations must depend on conditions in the central money markets. Let us suppose, for instance, that the Richmond Bank comes to believe that some restraints on the use of reserve credit in its district are desirable. By advice and counsel, by direct refusal of loan applications, possibly by a rate increase approved by the Board, it might succeed in cutting down the volume of its own credit in use. But if at the same time money conditions in New York remain easy, Virginia banks may appeal to their New York correspondents for loans and in this way nullify the restrictive efforts of their own Reserve Banks. All that the Richmond Reserve Bank has succeeded in accomplishing may therefore have been to create discontent among its own member banks. On the other hand, efforts to loosen up credit in the Richmond district might be partially countered by a calling of loans by New York City correspondents.

These interrelationships might indeed have developed in such a way as to create constant discord between the Reserve Banks operating in and those operating outside the country's financial centers. In prediction of this lack of cooperation, many students of the reserve organization have from time to time prophesied that eventually the Reserve Board would become the champion of the smaller Reserve Banks and the agency for insisting that the larger Reserve Banks pay heed to interior difficulties. But generally no such appeal seems to have been necessary. Nothing is clearer in the period under survey than that the larger Reserve Banks, particularly the New York Bank, took great pains to secure the loyal goodwill of the other Reserve Banks.

The earnings situation goes far to demonstrate this point. It has been estimated that in order to earn expenses and minimum dividends the Reserve Banks as a system were obliged to keep outstanding between $1,000,000,000 and $1,200,000,000 of credit. In the early part of 1925 the outstanding volume of reserve credit did not average much more than $1,000,000,000 and in the early part of 1926 not much above $1,200,000,000. Of this total, open-market bills and securities accounted for a little more than a half. All Reserve Banks regularly purchase some acceptances and government securities locally but the bulk of these purchases must be made in New York, and to a lesser extent in the other financial centers of the country. This fact explains in part why the open-market committees, working under the auspices of the Board, were composed of governors of the New York, Boston, Cleveland, Philadelphia, and Chicago Reserve Banks. In apportioning open-market paper it might be expected that the larger Reserve Banks would insist upon an apportionment based possibly on their relative capitalizations. But the figures show that the New York Bank usually

permitted a considerable scaling down of its own allotment. Thus on June 30, 1926, the New York Bank with a capital almost 30 per cent of the system's held a portfolio of government securities only 21 per cent of the total. Its bill holdings were then only 22 per cent of the system's aggregate portfolio. Similarly, the New York Bank on July 1, 1925, had a capital 26 per cent of that of all Reserve Banks. But its allotment of purchased bills was 18 per cent and of government securities 24 per cent of the total.

On particular occasions individual, interior, Reserve Banks have experienced little rediscount demand. Thus Minneapolis on June 30, 1926, had a discount portfolio of only $3,758,000 but was allotted $19,828,000 of government securities and held over $10,000,000 in purchased bills. On June 24, 1925, Dallas' portfolio contained more than $6 in purchased bills and government securities for every dollar of discounted bills. New York, on the other hand, had on that date only 77 cents worth of bills and securities for every dollar of discounted bills. Such illustrations are not rare. Clearly, in the allotment of open-market purchases New York was amply recognizing the relatively greater overhead burden, and also the restricted discount demand, of some of the other Reserve Banks.[1]

Operating under these conditions New York was usually in a position to secure a cordial audience in its contention that the open-market operations of the interior Reserve Banks had a close relationship to the New York market and that consequently foreign gold movements were a matter of general concern. But a stubborn refusal to cooperate with New York could easily have been nullified. When easing measures

[1] One way of increasing discount demand would have been to reduce purchased bills and securities. But such sales would have operated principally to increase discount demand in New York, and not in the interior.

were required the New York Bank could have insisted on the same share of open-market purchases relatively to its capital resources as the other Reserve Banks. Such an allotment for New York would either have deprived the rest of the system of a part of its previous allotment or would have operated to ease the money market to such an extent that New York City correspondents would become more vigorous competitors for the interior member banks' business. On the other hand, if restrictive measures should be required, the superior earning power of the New York Bank would permit it to do relatively the most in scaling down its own offerings. It is more or less inevitable in the reserve banking system that influence will rest with the institution operating in the country's biggest money-market center.

Both in 1924 and again in 1927 the Reserve Bank of New York seems to have been most tactful in its contacts with the Reserve Banks whose interests were largely agrarian. On each occasion the argument for restricting gold imports was based on the probable effect of continuing gold imports upon the foreign demand for American agricultural products. In 1924 the easing measures were also defended on the grounds of getting member banks in the "failure" districts, and these were principally the agrarian sections, out of debt to the reserve institutions, so as to loosen up credit generally and thereby help to facilitate general revival. In personal conversations in 1926 and 1927 with a number of officers of interior Reserve Banks the writer was highly impressed by the spontaneously expressed cordial references to then Governor Strong of the New York Bank. These expressions of goodwill seemed to represent something more than professional courtesy.

In some of the larger Reserve Banks, such as Chicago, there may have been greater reason for opposing easing measures. In Chicago a drop in official discount

rates might well be viewed with more consternation. Bankers in Chicago complaining of the low money rates often insisted that a decline in the official discount rate operated to put customers in a mood to demand unreasonably low rates from their own member banks. In Chicago discount demand is also relatively heavy and steady and the conservative open-market allotments to the New York Bank possibly did not make so great an impression as in, say, Minneapolis and Dallas.

X QUALITATIVE CONSIDERATIONS

From the standpoint of the going problem, it is difficult for the writer to formulate a highly adverse criticism of reserve policy in this period. Later events do seem to confirm the conclusions of those who advocated easing measures earlier in 1927 and who felt by the middle of the year that conditions had so changed as to render at least questionable the wisdom of the August reductions. But allowance must be made for the complicated character of the reserve administration and consequently for the time required to develop the desirable consensus of opinion in respect particularly to the significance of international financial developments.

It may be that this is all there is to the problem. Perhaps no more can ever be expected of the Reserve Banks than that they make proper adjustments from time to time on account of *current developments,* and it may be purely academic to inquire into the accumulating results of gradually changing, underlying, forces, which sometime in the future might result in general disaster. In other words, if the Reserve Banks' operations were well conceived from a short-time point of view, they might be held immune from adverse criticism on account of any underlying trends.

Many bankers and economists, however, were most deeply concerned on account of what they regarded

as a gradual deterioration in the quality of credit. While they may have refrained from finding great fault with the actual administration of the system, they frequently insisted that the Reserve Banks should be provided with greater powers and responsibilities to direct the use of credit, and they advocated that the whole banking system should be completely overhauled. In so far as those of this opinion did disapprove of policies, it was principally because the reserve administration had not taken a position of leadership directing Congressional attention to underlying dangers and to the necessity for remedial legislation.

All of this requires us to make brief reference to the particular tendencies in the credit world which gave rise to the most apprehension. Such facts as the following were emphasized by those fearful of future consequences.

From July, 1924, to July, 1927, street loans reported by New York City banks increased about 100 per cent.[1] In the same period also loans on securities of reporting member banks grew 40 per cent, and investments 23 per cent, while the supposedly commercial grouping of "other loans" increased less than 10 per cent. On the liability side, time deposits of member banks increased (between June 25, 1924, and June 22, 1927) 32 per cent, while demand deposits increased by only 13 per cent. Member-bank statistics seemed to indicate clearly that the increase in member-bank credit was due principally to investment and speculation, instead of to commercial and agricultural operations.

Accompanying these credit changes between the summers of 1924 and 1927 there was a decline of about 1 per cent in commodity prices[2] and an increase of approximately 70 per cent in the prices of common

[1] Figures prior to 1926 are not precisely comparable with those reported since 1926.

[2] Bureau of Labor. Wholesale Price Index, 1926 = 100.

stocks.[1] In volume activity industrial production grew to be sure, 27 per cent,[2] but the increase in the number of shares sold on the New York Stock Exchange far surpassed this rate of growth.

Meanwhile the comptroller's estimates were showing a gradual diminution in member banks' holdings of eligible discountable paper, and it was difficult to deny that "other loans" held up as well as they did only by the inclusion of real estate and a growing volume of installment finance paper.

On the basis of such facts three major criticisms of the existing credit organization began to crystalize: first, that urban and financial, as distinguished from rural and agricultural, credit demands were being unduly preferred; second, that the liquidity of commercial bank assets was being impaired; third, that the country's security structure was being overbuilt.

It is of course true that responsibility for these developments was frequently laid directly at the door of the Reserve Banks. For one instance, the tendency of banks in rural sections to dispatch depositors' funds to their urban correspondents was attributed to the Reserve Banks' demands that member institutions, requesting reserve accommodation, should make every effort to diversify their holdings. A rural bank, situated in a one-crop district, can diversify only by increasing its outside investments, and these outside funds will be used, principally at least in the early stages, by urban borrowers, of one description or another. As a second instance, there was a more or less inarticulate feeling that the stabilization of the central money markets, by methods outlined in Dr. Burgess' book,[3] had resulted

[1] Standard Statistics Index of 228 stocks.

[2] Federal Reserve Board Index.

[3] *Op. cit.* For a statement of this criticism, see Harold L. Reed, Overstabilization of the New York Money Market Stimulates Brokers' Loans, *New York Times Annalist*, Nov. 9, 1928, p. 731.

in increasing the attractiveness of the street loan. As a third instance, it was often asserted that the Reserve Banks were operating too largely in the open market and that funds thereby released in the financial centers did not work their way into rural sections except by the most cumbersome and devious processes. This thought expressed itself in the frequent opinion that the Reserve Banks should confine their activities more largely to discounting on member-bank application.

But no examination of criticisms of this type could proceed very far without injecting into the discussion the policies of member banks and the adequacy of the existing banking organization. Prior to the McFadden Act, National Banks were restricted against the acquirement of real estate mortgages, and agricultural leaders testified that the limitations of section 5200 (*in re* amount a bank can lend to one party) handicapped the moving of crops, particularly in highly specialized agricultural areas. With respect to the relative increase in time deposits, responsibility was laid in part upon the rigid interest policy of banks with reference to savings accounts. In a period in which long-time money rates were tending downward, failure of savings banks to lower rates paid to depositors operated to retain in the banks in the form of time deposits funds which otherwise would have been invested in bonds or mortgages directly.[1] With reference further to the growth of time deposits, part of the tendency was attributed to the more careful analysis by business depositors of their current cash needs. A time deposit, even though notice of withdrawal may be required, serves to back up the demand account. For the business corporation it is a sort of a secondary cash reserve. The whole responsibility for the increase in time deposits could not be attrib-

[1] *Cf.* SPRAGUE, O M. W., Interest Rates on a Long Downward Trend, *New York Times Annalist*, Apr. 15, 1927, pp. 526–527.

uted solely to the Reserve Banks' failure to prevent the member banks from violating at least the spirit of the law by classifying deposits so as to secure a lower reserve requirement.

Discussion of the causes of the "seepage" of credit to urban centers inevitably invited a consideration of the branch powers of member banks. The proponents of state-wide, and also interstate, branch banking insisted that agricultural credit difficulties required principally an improvement of the arteries for conveying to agricultural communities banking funds piling up in the urban centers. In the greater part of the period under examination the extension of National Bank branch powers (within city limits) was receiving Congressional attention. In view, furthermore, of its membership problem, the federal reserve system could not have been expected to take a definite stand on this delicate question.

The "liquidity" objection to member-bank credit activities involved, in addition to the problem of determining the responsible cause, that of measuring the actual development. "Liquidity" depends at least as much upon shiftability as upon the maturity of portfolio items. Nothing is ordinarily more shiftable than high-grade bonds or loans based on security collateral. Particularly true was this when the Federal Reserve Banks possessed large unused reserves and were always in a position to remove from the shoulders of member banks the load of carrying many more millions of government securities.

The volume of security speculation in the financial centers as well as the increasing height of stock prices could not but occasion alarm. But security operations may represent merely a means whereby credit is called forth, later to be distributed over the whole business community, and in the period under consideration the

credit supply in the aggregate was not growing at an excessively rapid rate. Security operations have to be watched carefully to prevent speculative excitement from developing into a premature dissipation of the country's credit resources But in the years we are-surveying, security prices had experienced three measureable market declines, namely in the spring of 1925, the spring of 1926, and the fall of 1926. These reactions must have done a good deal to shake loose weak holders, to discourage rash borrowings for margin operations, and to produce the sobering influence of compelling stock purchasers to base bids upon yields. Particularly true would these observations be if the rate reductions of 1927 has been inaugurated, say, six months earlier.

In the period under study the Reserve Banks were subjected to the constant criticism that they were overusing their powers and were continuously interfering with automatic money-market developments. To counter such criticism, reserve officials replied that while they admitted some power to affect the cost and supply of credit, they had no effective means of directing credit into and away from particular uses. As a statement of fact this may have been largely true. But even though the Reserve Banks may have some power to direct the use of credit, it is clearly desirable that they exercise restraint in its employment. No central banking system which accepts responsibility for the proper allocation of credit among rival uses can long survive successful political attack. The qualitative developments complained of did involve such problems as the desirable apportionment of credit between agriculture and commerce, between commerce and speculation, between speculation and investment. To the extent that problems of this character arose, the Reserve Banks should not be criticized adversely for failing to take a more positive stand regarding various proposals to reform

the whole credit machinery of the country. But study of a later period will throw more light upon the question whether a wiser exercise of their general and quantitative powers would have enabled the Reserve Banks to mitigate the evils resulting from the overuse of credit by the security markets.

CHAPTER IV

FEDERAL RESERVE POLICY FROM THE SUMMER OF 1927 TO THE OCTOBER STOCK-MARKET CRASH OF 1929

I. THE DEMAND FOR RESERVE CREDIT IN THE FALL OF 1927

At the close of July, 1927, before the rate reductions had been accomplished,[1] the total bills and securities of the Reserve Banks stood at the low figure of $976,000,000. Thenceforth, the volume of reserve credit increased steadily, so that at the end of December the system's total portfolio amounted to $1,591,000,000. This increase of $615,000,000 in the volume of reserve earning assets exceeded considerably even that experienced in the same months of 1924 or 1925.

From July 30 to Dec. 31, 1927, the increase of bills discounted was $184,000,000. This growth in the discount portfolio was accomplished in the face of an enlargement of $213,000,000 in purchased bills and of an increase in United States securities of $218,000,000. Additions to the volume of reserve credit were thus manifested in all classes of earning assets.

II. THE EFFECT OF THE GROWTH OF RESERVE CREDIT UPON MEMBER-BANK OPERATIONS

In the fall months of the year, the public's currency requirements normally enlarge, and, in the latter part of 1927, record exports of gold created a special demand for reserve accommodation. These factors must be taken into account in determining whether the effect of

[1] Except in Kansas.

reserve operations was to ease or to harden the credit market.

One way of estimating the net influence of reserve operations is to compare the increase in the outstanding volume of reserve credit with the country's gold loss plus the drain of money into general circulation. From the close of July, 1927, to the end of December, the amount of money in circulation increased $157,000,000.

In the same period of time the country's monetary gold stock decreased $159,000,000. The total of these two items, $316,000,000, represents the extent to which currency factors were increasing the need for reserve accommodation. In these five months, however, the volume of reserve earning assets increased $615,000,000 and of reserve credit of all forms $594,000,000.[1] The Reserve Banks, therefore, in addition to offsetting the currency drain supplied an extra $278,000,000 of credit to the country's banks.

Under these conditions, member banks were able to increase[2] their reserve balances by more than $150,000,000. Normally member banks' reserve accounts undergo little change in any short period of time. Any considerable enlargement operates to produce extreme ease in the money market. The growth in member-bank reserve balances in the last five months of 1927 exceeded even that which had been experienced in 1924.

We may also examine figures relating to the total loans and investments of all member banks. In the last five months of the year the total expansion was at an annual rate of 10.8 per cent.[3] This rate of increase is of course considerably in excess of any rate which can be

[1] This latter figure takes into account not only holdings of bills and securities but also "due from foreign banks" and "Reserve Bank float."

[2] From July 27 to Dec. 28, 1927.

[3] The actual increase for the five months was 4.5 per cent. Multiply 4.5 per cent by $\frac{12}{5}$ to obtain annual rate of increase for the five months, we have 10.8 per cent.

permanently sustained and is more than twice as great as the average expansion in postwar years. It may be proper, furthermore, to compare it with a growth in the physical volume of trade of 3 or 4 per cent per annum.

III. WAS CREDIT EXPANSION IN THE FALL OF 1927 EXCESSIVE?

With some dissenting opinion, New York financial observers were agreed that the fall money market of 1927 had been rendered unnecessarily easy. On Oct. 15, 1927 there appeared in the *New York Journal of Commerce* an editorial on The Low Rate Fiasco in which it was concluded that:

> The proper thing to do is to reverse the low rate policy and get back to a basis which recognizes the real facts of the present money market and capital situation. So doing may give the markets a severe jolt, but not necessarily an injurious one. The sooner the policy is definitely taken up and consistently followed the better off we shall be and the less suffering we shall undergo.

Previously, on Oct. 6, 1927, the *Journal of Commerce* had said:

> Business does not expand in response to the present extraordinarily easy money condition. Business is apparently satiated so far as credit is concerned. We have an enormously larger line of credit outstanding than we had a year ago, but we have less business. The various business indexes that are published show in a few instances a larger turnover than a year ago, but in most cases a decidedly smaller one. If there should be any great business change, any call for widespread or urgent liquidation, it is quite probable that the result would be an immediate expansion of business demand for bank funds. That, however, would be an emergency matter. The present point is that with things as they stand, business does not need any more loans. It is well capitalized and when cheaper money is offered to it, it uses that money merely for the sake of refunding its already outstanding obligations at lower rates, but it does not use it for the enlargement of production or trade.

It would perhaps be expected, however, that any considerable easing tendencies would express themselves with greatest force in the country's largest financial

center. Surplus funds in the interior, when dispatched to New York, have the result of increasing bankers' balances in New York City, of enlarging credit offerings to security brokers, of facilitating the distribution of new stock and bond issues. In so far, furthermore, as the Reserve Banks increase their purchases of bills and securities, the effect, at first at least, is usually experienced principally in New York City. In view then of the kind of analytical material which daily reaches the desk of a New York financial writer, care must be taken to note the precise counts on which the indictment could be sustained with respect to credit conditions generally.

1. Evidence might be introduced showing a more rapid lowering of money rates than could easily be explained on such grounds as increased savings and improvements in the technique of banking practice. During December, 1927, rates on 4 to 6 months prime commercial paper, on 90-day banker's acceptances, on time loans, and on call loans all averaged less than for the same month of the preceding year.

2. Attention could be called to the fact that indices of production, trade, and commodity prices did not move in any such way as to indicate the need of as great an increase in the credit volume as was sustained. The Board's Index of Industrial Production had shown declining tendencies since the first quarter of 1927 and for the last six months averaged 103 as compared with 109 for the first half of the year.

3. Banking statistics showed that the growth in member-bank credit in the second half year of 1927 was almost entirely attributable to investments and loans on investment. From Aug. 3 until Dec. 28, 1927, the reporting member banks increased their total loans and investments by $1,364,000,000. Only $97,000,000, or 7 per cent of this increase, was due to the supposedly commercial grouping of "other loans."

4. Total brokers' borrowings reported by members of the Stock Exchange increased from June 30 to Dec. 31, 1927, by $864,000,000, or 24 per cent. Before the summer rate reductions, on June 30, 1927, for instance, the total of brokers' borrowings was not much larger than at the beginning of 1926.

5. With the exception of a brief relapse in October, stock prices continued their rapid upward movement. The Standard Statistics Company's weighted monthly averages of weekly closing prices of 229 common stocks stood at 171.7 in July. The December average was 194.6. Since industrial production was not increasing, it would be easy to attribute this advance in prices to the artificial influence of cheap money.

6. The volume of new corporate security offerings topped all previous records and the New York Reserve Bank's Index of Shares Sold on the New York Stock Exchange increased from 189 in July to 281 in December

Impressive, however, as is such evidence, it does not prove the charge of too easy credit with finality. On earnings considerations it might be maintained that the rise of common stock prices, and the increasing volume of security credit, was justified. It was also a little difficult to conclude that easy money was inflicting much harm upon business as a whole as long as production and prices were manifesting some declining tendencies. Apparently to escape argumentative difficulties on this score, the analysis, cited in the *Journal of Commerce*, made much of the irresponsiveness of commercial borrowings to falling money rates. With general business thus displaying no immediate response to easy money, it was concluded that the growing security operations evidenced only the influence of artificially created cheap credit.

The question may be properly raised, however, whether such criticisms made sufficient allowance for

the lag in time which might be expected to intervene between cheaper credit and expanding trade. After a period of uncertain tendencies of trade and production, should the commercial demand for credit be expected to respond quickly to low money rates in the country's financial centers? Throughout the country in latter 1927 ordinary customers rates experienced no considerable decline and, as an element of cost to the merchant, slight reductions of money rates are a rather inconsiderable factor. Low rates on short-time loans do not normally have nearly so much of a stimulating effect upon business plans as ability to sell funded obligations at high prices has upon capital projects. Bonds or stocks sold at high prices insure cheap money for many months, or even years. It takes time, however, for the proceeds of security issues to be distributed in pay rolls and purchases of materials, and, furthermore, there is no profit in distributing funded obligations when money is cheap if shortly thereafter it is to become even cheaper. It would seem reasonable, therefore, to contend that some lag in time must intervene before easy money produces its principal result in the direction of encouraging a revival of activity in the basic industries. In late 1927 there was much justification for the prediction that outputs and employment would display their response to easy money sometime in 1928 to a greater extent than in 1927.

A study of certain previous periods might have supplied precedent for the lag assumption.[1] In the revival of 1922 and 1923 the peak of new, corporate issues[2] was reached in the summer of 1922. The physical

[1] The belated response of physical production to increasing security issues would not be expected to occur at a time when production is close to its maximum.

[2] *Cf.* Ellsworth, D. W., The Unprecedented Volume of New Stock Issues. A Statistical Analysis. *The New York Times Annalist*, Oct. 25, 1929, pp. 813–814.

volume of production[1] at that time, however, was from 20 to 25 per cent below the peak attained in the spring of 1923. Similarly new, corporate issues reached a peak at the beginning of the last quarter of 1924, but the Board's Index of Industrial Production did not reach "normal" until December of that year. There was therefore some factual basis for the contention that in the latter part of 1927 what appeared to be unrequired credit might contribute to enhanced trade and production in 1928. As a matter of fact this was precisely the development which was later to be recorded.[2]

But more conclusive support for the charge that money was too cheap at the end of 1927 might be found by stressing the following facts: First, declining trade and production themselves help to develop credit ease without the assistance of any absolute enlargement in the credit supply. Second, the per annum rate of increase in the volume of credit in the second half of 1927 was at least twice as great as the secular growth in the physical volume of trade. Third, in the last two months of the year, the Board's Index of Industrial Production declined so sharply as to indicate that adjustments outside the realm of credit were required to restore production to normal dimensions.

In 1924, however, quite similar observations could have been recorded; and in 1924, credit relief was provided not only by the automatic process of diminished trade demands but also by aggressive measures of credit relief on the part of the Reserve Banks. If liberal credit policies succeeded in 1924, it would therefore seem reasonable to conclude that similar policies could have been expected to prove beneficial in 1927. But in 1927

[1] As measured by the Board's Index of the Physical Volume of Industrial Production.

[2] The failure of easy credit to stimulate production to a greater extent in 1927 might also be attributed in some measure to the suspension by the Ford automobile works of the manufacture of the old-model cars.

the security market's use of bank credit had so expanded that the dangers which might result from easy credit were considerably greater. In view of developments in the security markets, should not at that time those influential in federal reserve analytical circles have reasoned along somewhat the following lines?

Surplus credit, it might have been agreed, produces its principal ameliorative results in corporations' long-time capital operations. Granted that the ability to raise permanent capital more abundantly and on cheaper terms should be expected to contribute to a belated improvement in the physical volume of trade, what about the ability of the Reserve Banks in the ensuing period of recovery to tone down the rate of expansion to a reasonable norm? The improvement in trade would of itself add to the demands upon the banks and the probable increase in share prices should lead to further credit demands by security purchasers. Once speculative appetites should become completely aroused, even severe measures of credit restriction might be ineffective. Well-developed bull markets usually ignore for a time the discouraging influence of higher carrying charges. Some slack in meeting the increased credit demands in a period of improvement would of course be provided by the more intensive utilization of temporarily idle bank accounts. But, to be conservative, policy must assume that there is practically no top to the amount of security activity which an aroused bull sentiment is capable of developing. Analysis of this sort, requiring consideration only of the high lights of past experience, might have gone far to justify the position that the credit expansion of late 1927 was decidedly excessive. In a period of declining trade it is dangerous to depend upon further ease to the money market than that which is gained by the recession itself.

But this leaves out of account international factors and again, as in 1924, it might have been insisted that

the test of the desirable degree of credit expansion was to be discovered in the status of gold movements. Accordingly, let us turn our attention to the gold situation after the easing measures of the summer of 1927.

IV. GOLD MOVEMENTS IN THE SECOND HALF OF 1927

For the last four months of 1927 the country's net gold exports were as follows:

TABLE XXII.—NET EXPORTS OF GOLD
(Thousands of dollars)

1927	
September	11,465
October	8,642
November	53,184
December	67,418
	140,709

In these months, the Federal Reserve Banks, furthermore, increased their earmarkings for foreign account by $82,501,000. This outflow threatened to exceed all past records, and it is important to note that the December outflow was the greatest of all.

The gold situation was therefore the very reverse of that prevailing in the summer of 1924. The utilization of reserve resources to ease the money market in late 1927 makes it appear that the reserve administration felt that easy money was the remedy for any kind of a gold movement. In 1924 the Reserve Banks inflated when there was a gold inflow; in 1927, when there was a gold outflow.

It is true that the gold outflow in the fall of 1927 was most pronounced in exports to non-European countries to which gold moves only in sluggish response to money-market factors. In the four months from September to December, gold exports were principally to Canada, Argentina, and Brazil. Thus:

TABLE XXIII.—NET GOLD EXPORTS FROM SEPTEMBER TO DECEMBER, 1927

(Thousands of dollars)

Canada	13,718
Argentina	61,390
Brazil	33,000
	108,108

This $108,000,000 amounted to more than 75 per cent of the total outflow.

Gold flows to some countries may be employed, however, in such a way as to ease the strain upon others, and thus the exports above indicated should be credited partly to the European relief account. It should further be noted that this outward movement took place in the season of the year when exports of agricultural products might be expected to develop a gold inflow. England and France furthermore took some gold from this country in these four months, although it should be mentioned that England dispatched insignificant amounts to this country in October, November, and December. It is thus very difficult to find in the gold situation any justification for the extent to which the Reserve Banks in this period operated to ease the American credit market. If the purpose was to assist Europe, gold flows were in the wrong direction; if, on the other hand, the intention was merely to offset the disturbances of gold exports, alleviating measures were overdone.

V. THE GOLD OUTFLOW OF 1928 AND THE OPPORTUNITY TO RESTORE SOUNDNESS IN THE CREDIT SITUATION

The easing measures of the summer of 1927 were predicated upon the ability of the Reserve Banks to check expansive tendencies by the imposition of vigorous measures of restraint after the temporary object had been attained. As we have seen, however, gold was exported instead of imported in the fall months of the

year and thus much of the 1927 policy was rendered pointless. Clearly, ease in the money market had been overdeveloped and there was thus added reason for the sudden drawing in of reserve credit in the early part of 1928.

In the absence of gold exports, a contraction policy is difficult to engineer. The Reserve Banks do not like to accept full responsibility for dearer and scarcer credit. As it happened, however, the Reserve Banks in 1928 were favored by a continuation of the outflow, and thus they were placed in a stronger position to check the continuation of the credit excesses which for months had given financial observers ground for complaint.

In the first half of 1928 the country's monetary gold stock was depleted by $270,000,000. The actual net gold outflow during this period was $372,000,000, but against this there were certain offsetting items the principle one of which was a reduction of $94,000,000 in earmarkings for foreign account. From the end of June until the close of December, 1928, the country's monetary gold stock remained fairly stable.

The reduction in the country's gold stock in the first half year of 1928 was by months:

TABLE XXIV.—REDUCTION IN THE COUNTRY'S STOCK OF MONETARY GOLD
(Millions of dollars)

1928	
January	6
February	11.2
March	57.5
April	38.7
May	105.7
June	51.0

We must next consider the extent to which the Reserve Banks availed themselves of this opportunity to create restraint in the security market's use of bank credit.

VI. THE FAILURE OF THE RESERVE BANKS IN THE FIRST HALF OF 1928 TO INDUCE RESTRAINT IN THE SECURITY MARKET'S USE OF BANK CREDIT

January, 1928, experienced a somewhat greater return flow of currency than usually occurs, with the consequence of reducing considerably the demand for reserve credit. But from Jan. 28 to June 30, 1928, the volume of reserve credit[1] increased $264,000,000, a sum slightly in excess of the reduction in the country's stock of monetary gold. Reserve credit, for this period, was therefore employed as a more or less complete offset to gold movements.

In the field of member-bank credit, in monthly averages of weekly figures, total loans and investments of reporting member banks increased $570,000,000 from January to July, an expansion during the quiet half of the year of 2.7 per cent, or at the rate of 5.4 per annum.

Over one-half of this growth in member-bank credit, however, was in investments and loans on securities. Despite a considerable increase in call-money rates (renewal-rate averages advanced from 4.24 per cent in January to 6.21 per cent in June), total collateral borrowings of members of the New York Exchange increased $465,000,000 (from Dec. 31, 1927, to June 30, 1928). It may therefore be concluded that in these months the Reserve Banks succeeded in reducing to a reasonable rate the expansion of member-bank credit as a whole but were unable to resist the growing demands for bank credit by the security market.

VII. EXPLANATION OF THE FAILURE OF THE RESERVE BANKS TO TAKE MORE AGGRESSIVE ACTION IN THE FIRST HALF OF 1928

Many reserve officials would of course dispute warmly the statement that their efforts to control the stock market's use of credit lacked vigor. They would point

[1] Of all forms. Not merely earning assets.

by way of rebuttal to the fact that the Reserve Banks reduced their holdings of government securities in the first half year some $380,000,000 and their bill portfolio about $160,000,000. To lessen the willingness of member banks to discount, the New York rate was increased three times in less than six months, so that on July 13 a 5 per cent schedule prevailed, the highest since 1921. The rate increases, moreover, were not confined to the New York Bank. Thus by Aug. 1, the 5 per cent rate ruled at all Reserve Banks save Minneapolis, Kansas City, Dallas, and San Francisco. Furthermore, the Reserve Banks and the Board, by direct methods and by constant warnings, sought to impress upon member banks that it was not legitimate to request reserve accommodation in order to sustain street loans.

It must be admitted that in these months the Reserve Banks did a great deal. But judged by the test of results, by tendencies in the field of security credits, they did not do nearly enough. The failure to bring the security market's demand for bank credit within control in the first half of the year was serious because in the latter half of the year agricultural demands for cheap credit to move the crops render it difficult on political, if on no other grounds, to exercise vigorous measures of restraint. It thus becomes necessary to inquire into the reasons explanatory of the impotence of reserve policy at this period.

Interdistrict Complications.

Principal responsibility may perhaps be laid at the door of the lack of cohesiveness in the federal reserve organization. It was in New York that the difficulty appeared to originate because it was in that city that brokers' borrowings displayed constant resistance to rising money rates. The usual first weapon—sales of government securities—would of course produce its

principal results in New York City, but it was difficult to exert sufficient pressure by vigorous rate action lest the net result be largely to transfer discounting to other Reserve Banks.

It is probably true that it would have been somewhat beneficial at this time for other Reserve Banks to have encouraged the withdrawal of funds from New York by establishing higher schedules in their districts. But the curbing of speculative credit demands was regarded in the system very largely as a special problem of the New York Reserve Bank; and it is doubtful if sentiment could have been gained for a policy of lifting rates first and to the greatest extent in other Reserve Banks.

It is not surprising under these conditions that the task of curbing the credit demands of speculative users of credit was undertaken with no high degree of concerted action. When New York raised its rate to 4 per cent on Feb. 3, nine Reserve Banks still maintained a 3.5 per cent schedule; and when New York went to 4.5 per cent on May 18, Cleveland, Atlanta, Kansas City, and San Francisco were operating on a 4 per cent basis. The increase to 5 per cent at New York on July 13 was effected at a time when only Chicago (Richmond went to 5 per cent on the same day) had set up a similar rate.

The general tendency of New York to precede the majority of other banks in the rate increases seemed to result generally in driving discounting to other districts. Before the rate increase of Feb. 3, namely on Feb. 1, 27 per cent of the system's discounting had been done at New York. On Feb. 8, New York still accounted for 27 per cent and on Feb. 15, 32 per cent of the system's total. But on Feb. 21, New York's total had shrunk to 18 per cent and on Feb. 29, to 16 per cent of the system's aggregate.

New York's 5 per cent schedule was set up on July 13. On July 11, its portion of the system's total of discounted

bills was 41 per cent. On both July 18 and July 25, its percentage of the total had fallen to 30.

These figures supply some statistical support for the contention that little could be done in New York to control the situation without the willingness of other Reserve Banks to increase their rates promptly and sharply.

On account of still another aspect of the regional situation, explanation may be found for the tendency of the Reserve Banks to lift their rate schedules by moderate gradations. For several years the practice has been developing within the system to set up similar schedules for all banks. Differences of discount rates seldom exceeded 0.5 per cent.[1] Under these conditions a plan proposing an increase of a full 1 per cent in the reserve rate in the city where the principal disturbance seemed to originate would have to contemplate months before a similar or higher schedule might be established elsewhere. If New York had gone to, say, 5 per cent on Feb. 3, how much delay would then have had to be assumed for the nine 3.5 per cent Banks to move to 5.5 per cent? The system of regional Reserve Banks has many fine features, but, nevertheless it offers distinct obstacles to unified interdistrict policy.

Political Complications.

The elections of 1928 were to take place in the fall and the slackening tendencies of trade and employment in 1927 must have created considerable embarrassment to the leaders of the party in power with respect to their ability to employ the prosperity argument. On several occasions both the President and the Secretary of the Treasury had seized the opportunity to indicate their confidence in the soundness of the business and financial situation. Early in January, 1928, for instance,

[1] At one time.

the Treasury announced the issuance of new 3.5 per cent notes to replace the Second Liberty 4.25 per cent bonds. Since the bonds were not to mature until Sept. 15, this announcement could scarcely be interpreted otherwise than as a declaration that the Treasury's influence would be exerted to maintaining easy money rates.

A year earlier Mr. Mellon had made certain remarks which seemed to indicate either that he regarded himself as the spokesman of the Federal Reserve Board or that this body was amenable to the influence of the national administration. As reported in the *New York Times* for Mar. 27, 1927 he said:

> I see nothing to indicate that business will not continue to be good throughout the country . . . There is an abundant supply of easy money which should take care of any contingencies that might arise. I do not look for any change in the Federal Reserve rediscount rate for some time to come because I can see no reason for changing it.

Further:

> Brokers' loans give a very good insight into the stock market situation, and they appear in a very healthy state.

In the writer's opinion there is little question but that in Board councils the influence of the Treasury must have been exerted at this time against a program of severe measures of credit restraint.

From another angle, however, it would seem that the principal political deterrent to vigorous action was the influence not of administration leaders but of Congressmen of reputed radical opinion. In fact it was Senator La Follette who, on Jan. 18, 1928, introduced the resolution requesting the Federal Reserve Board to restrict the future expansion of brokers' loans by member banks. In the hearings which were held shortly thereafter on the question of the necessity for further legislation, Senator Brookhart actively participated. His

remarks were characteristic utterances of one who seemed constantly alert to find evidence of the preferred treatment of eastern, moneyed, interests. He expressed the opinion that the seepage of bank funds to the street was the cause of the divergent movement of prices of agricultural land and of corporation securities.[1]

To check just such a seepage what seemed to be needed was relatively higher discount rates in the western and southern Reserve Banks than in New York. But it required no high degree of imagination to discern that a policy of maintaining higher discount rates in the west and south would furnish ideal food for denunciatory criticism. "Does it not," it would be asked, "indicate the impotency of the reserve administration, when it finds no other means of restraining the security market's appetite for bank credit than to increase most sharply the cost of credit in the interior?" From all angles the political situation was not favorable for severe measures of restraint.

Inadequate Precedents.

In analyzing the events leading up to the disaster of 1920, economists have been pretty generally agreed that difficulties would have been largely avoided if the reserve system had been free to utilize as guides either the disclosures of commodity-price or those of trade and production indices. Since 1921, according to our analysis, the broader purposes of the Reserve Banks had been accomplished with reasonable success by insisting upon the productive use of credit and by hearkening unto the gold requirements of countries returning to the gold standard. In early 1928 commodity prices were displaying no great tendencies to increase and the recovery of basic production could be regarded as a healthy

[1] See 1928 *Hearings of the Senate Banking and Currency Committee on Brokers' Loans.*

reaction from the recession of 1927. Just how to deal with the speculative demands for bank credit was accordingly a problem involving a considerable amount of the imponderable. The old guides to reserve credit policy did not seem to meet the demands of the situation.

As far as the technique of reserve action is concerned, the collapse of 1920 had doubtless impressed upon the reserve administration two points. In the first place, any difficulty growing out of surplus credit should be met by prompt, and not belated, measures. In the second place, restraining measures should be mild. As often expressed, the Reserve Banks in 1920 applied the brakes too late, and when they did apply them, they did so with excessive vigor.

Prompt restraining action in 1927 and 1928 was, however, impossible because of the delay in imposing the easing measures of 1927. A policy which had not been completed by August and which to be effective had to run the gauntlet of internal hostility could not very well be succeeded by the sudden imposition of measures of restraint during the agricultural harvesting season particularly. Such speedy reversal of policy would seem to imply that the rate reductions in the late summer of 1927 had not been well conceived. Delay in initiating credit pressure was under the circumstances more or less inevitable.

With respect to the vigor of corrective measures, once a policy of restraint was begun, there had not been since 1920 a single instance in which the New York Bank had increased its rate by a jump of more than 0.5 per cent. Undoubtedly, in the minds of the reserve administration, the three 0.5 per cent rate increases in the early part of 1928 represented quite vigorous action.

In England, a central bank is better fortified by experience in raising discount rates by sharp gradations.

It is now tradition for the Bank of England to go up by full 1 per cent jumps and to come down by 0.5 per cent declines. In this way the endeavor is made to shorten the period of restrictive action as much as possible.

The whole question, furthermore, of the relationship of security borrowings to the supply of bank credit as a whole has long been one of the most difficult which economists have been obliged to analyze. In the opinions of some analysts, credit offered security purchasers is just as thoroughly withdrawn from other uses as credit employed in commerce, industry, or agriculture. But according to the views of other analysts, security operations, to a much greater extent than those of commerce and business, partake of the character of barter transactions, in which relatively little demand for a medium of exchange is created. This latter view had found expression in the theories of the Swedish economist, Professor Gustav Cassel. In Cassel's words:[1]

> Stock Exchange speculation cannot divert capital, for every buyer of securities has to find his counterpart in the shape of a seller of securities. Thus, every transaction releases exactly the same amount of capital as it ties down on the other side. As a matter of course, the New York Stock Exchange can absorb fresh capital as a result of the issue of new shares; this only means, however, that the Stock Exchange provides new means for investment in the country. The popular conception, according to which the Stock Exchange absorbs funds at the expense of the productive forces of economic life, is, in reality, inaccurate.

Along different lines the same conclusion was reached in the February, 1928, *Monthly Review of the National City Bank.*[2] Therein we read:

> During the past year . . . funds have been available for employment more rapidly than they could be absorbed by the country's ordinary needs and bankers have been glad to send the *surplus*[3] to

[1] *Cf. Commercial and Financial Chronicle,* May 5, 1928, p. 2737.

[2] P. 25.

[3] Italics are the writers.

New York to earn whatever it could in the call money market. With call rates frequently as low as 3.5 per cent[1] during recent months it should be obvious that bankers would have had little incentive to send money to New York had there been any chance of employing it safely and profitably at home. As a matter of fact, there has seldom been a time when the volume of credit available for legitimate agricultural and commercial needs has been as great as during the past year.

So far, then, as was concerned the significance of speculative events, and their relative importance as compared with developments in the field of prices and production, the Reserve Banks were confronted with one of the most controversial of economic questions. Decisive action does not proceed from uncertainties and imponderables. In federal reserve activities vigorous measures require the support of clear precedents, developed in the past. But these precedents were lacking in 1928. Conclusions suggested by analytical reasoning never have the binding force of tradition.

As later events were to make clear, the policy of lifting rates slowly and of engaging in only moderate sales of government securities proved thoroughly inadequate to discourage speculative excesses. Moderate rate increases did little to test out the market thoroughly, that is to shake out purchasers who depend too largely upon borrowed funds; and thus the market became gradually educated to paying higher rates. With the failure to test out the market thoroughly in early 1928, a further speculative advance developed which rendered higher money rates ineffective in discouraging the security market's demands for credit. The Reserve Banks were thus finally put in the position of decreeing recently unprecedented rates for commerce and business or of finding some way of arbitrarily directing bank credit out

[1] Even after call rates became much higher it could be contended that security transactions produced much more effect on money rates than on the supply of credit available elsewhere.

of speculative uses. In the failure, in turn, of these direct measures to discourage speculative demands there was little to do except to permit the bull market to break of its own weight.

VIII. EVENTS IN THE SECOND HALF OF 1928

By Aug. 1, the process of raising discount rates had been completed for the year 1928. After this date all Reserve Banks, save Minneapolis, Kansas City, Dallas, and San Francisco, operated under the 5 per cent rate schedule. In the second half of the year, also, holdings of government securities were not seriously altered, so that, with gold flows moderate, the usual fall increase in the volume of reserve credit was manifested principally by an enlargement between July 3 and Dec. 26 of $279,000,000 of purchased bills. This growth in the volume of reserve bank credit matched so closely the increased demand for money in circulation that up to the close of December member-bank reserve balances displayed relatively little change. The total loans and investments of reporting member banks did decline slightly,[1] but this decline was confined to the investment account.

All of this indicates effectiveness in the efforts of the Reserve Banks to check the excessive expansion in the aggregate of member-bank credit. But this relaxation in the demand for member-bank credit was not assisted by increased moderation in the security market's demand for credit. In the second half of 1928 street loans of members of the New York Stock Exchange increased by the record amount of $1,542,000,000, or more than 30 per cent. The Standard Statistics Index of 392 common stocks advanced from 145.3 in June, 1928, to 172.9 in December, an increase of 19 per cent. Growing tension in the money market was indicated by the

[1] Between July 3 and Dec. 26.

attainment in December of an average rate of 8.86 per cent on new call loans in New York City.

Outside the field of security credits, evidence of increasing money tension in the fall was supplied by the higher rates on short-term Treasury certificates. In September, a 9-months' issue bore the rate of 4.5 per cent, the highest of any offering since March, 1923. In October, an 11-months' issue was offered at 4.75 per cent. These rates are to be contrasted with a 3.25 per cent rate on a 9-months' issue of only half a year previous, March, 1928.

With this hardening of the money market, the reserve administration's embarrassment was serious. What would be the effect upon commerce and agriculture of any further credit tension induced by reserve operations? On the other hand, if the Reserve Banks should fail to exert credit pressure, would not the growing credit demands of speculative users of credit of itself create tension for other business? Out of this dilemma, there seemed to be only one exit, and this lay in the direction of attempting to discriminate between the credit demands of industry and speculation. As a matter of fact, however, measures having this purpose in view had already received recognition.

IX. EVENTS PRECEDING THE MARCH, 1929, STOCK-MARKET REACTION

In the endeavor to maintain fairly easy money for agriculture and commerce in the fall of 1928, the Reserve Banks kept their acceptance buying rates low.[1] In large degree, probably as a consequence of this policy, purchased bill holdings of the Reserve Banks averaged the high figure of $483,000,000 in December. At the turn of the year, an increase in bill purchase rates could

[1] At the New York Reserve Bank, buying rates on maturities under 90 days were 4.5 per cent.

thus be relied upon to exert some credit pressure by forcing member banks to discount at higher schedules. With discounted bill holdings exceeding a billion dollars a further increase in the reserve discount rate was also possible. Not so much reliance at this time could be reposed in sales of United States securities. This item in the reserve portfolio had fallen, in terms of the December averages, to the relatively low figure of $263,000,000.

On Jan. 21, 1929, higher buying rates were decreed in New York on all maturities of acceptances. Further bill purchase-rate increases were invoked on Feb. 15, Mar. 21, and Mar, 25. After Mar. 25, the rate on even the shortest maturity was 0.375 per cent in excess of the discount rate, a relationship which had not prevailed since 1920.

This increase in bill rates reversed the fall policy of creating a wide differential in favor of the acceptance method of obtaining reserve credit. But events had clearly shown that the acceptance privilege had been abused. Just as in 1919 the preferentially low rate on paper collateraled by government securities proved abortive, so also did the preferred treatment of bills create criticism in 1928. Commenting on this situation, an editorial in the *New York Journal of Commerce* of the issue of Jan. 2, 1929, said:

> In other ways, too, the Reserve System has become a receptive dumping ground. It has allowed in times past, and to a large extent still allows, persons with frozen accounts to convert them into acceptance form and discount them at Reserve Banks. The backing behind many of the acceptances it holds is merchandise in warehouse, cotton, grain, and other less salable goods. Through the policy of allowing banks to rediscount their direct notes secured by eligible paper, and then to withdraw such paper, substituting new units for old, the system has practically opened lines of credit which can be kept in existence indefinitely. An investigator whom the Reserve Board sent to several of the outlying districts of the system a year or two ago reported that the idea of self-liquidation in paper dis-

counted was hopelessly dead, and that the Reserve Banks there were merely following exactly the same methods that were pursued by member banks—granting lines of credit which were as well collateralled, or secured, as possible, but which might have an almost indefinite existence.

Further acceptance abuses were manifested in the banks' practice of employing sales of bills to the Reserve Banks as a substitute for rediscounting and to use the funds so obtained on the street. Nevertheless, in the writer's mind, there is no question that the development of these acceptance abuses was anticipated by the reserve administration. Complications were probably accepted merely because of the seriousness of the situation. It is unlikely that it was ever intended to maintain the preferentially low rates on bills for more than a short period of time. After the fall credit demands had subsided, an increase in bill-buying rates, such as was actually levied, might reasonably well have been anticipated.

Correction of the acceptance abuses, however, did not require adoption of the reverse extreme of holding bill-purchase rates above the discount schedule. With the increase in bill-buying rates, it was no doubt generally expected that discount-rate schedules in turn would be increased. But no such increase was effected until Aug. 9, 1929, when the New York rate was finally moved up to 6 per cent. It is therefore not surprising to note that in the first quarter of 1929 the reduction in the volume of reserve credit was accomplished more largely in bill holdings than in any other item of earning assets.

When such firmly established precedents as maintaining lower rates on the supposedly superior type of paper are waived, it would seem clear that the situation did not develop through mere inattention or by default. Certain minds in the reserve administration must have

been thinking along independent and exceptional lines. To what then may we attribute this apparent anomaly in the federal reserve rate structure?

Several points, undoubtedly, entered into the deliberations of reserve officials in the decision not to raise discount rates immediately. In the first place, it was clear that any rate advance would have to be a full 1 per cent. To have gone up to 5.5 per cent only might have been interpreted by the market optimistically and have failed to induce conservatism. 1928 experience had plainly revealed the futility of the 0.5 per cent jumps. Some rate increase was generally expected and a mild increase would probably have had less effect than no increase at all. With no increase effected, the market would have been in daily expectation of some rate action, and it might have anticipated a steep increase.

If there had been an actual 1 per cent increase, moreover, the New York rate would have been 6 per cent, and the next jump would have had to be to 7 per cent, the equal of the maximum attained in 1920. If we recall the "deflation" criticism of reserve policy in 1920, it is not difficult to realize how anxious the reserve administration must have been to avoid that extreme in 1929.

The effect of a rate increase, as just intimated, is also perhaps much more psychological than economic. It is not so much the increased cost of discounting as the fact that the Reserve Banks have signalled their intention to employ decisively every weapon within their power to curb undesired expansion. With rates on acceptances above discounts, would not the market expect the discount-rate increase to come shortly as a matter of course? And would not the expectation of a discount-rate increase be just as effective as the increase itself? Furthermore, in so far as the efficacy of a rate increase lies in the implication that other means of

credit restraint will be employed, why not employ these other methods directly and with an unmistakably strong declaration of purpose? In this way, "banking" policy as distinguished from "credit" policy became the watchword in federal reserve circles.

A part of the "banking" policy consisted in preachments to member banks that it was not legitimate to carry any extensive borrowings from the Reserve Banks if at the same time any considerable amount of money was being dispatched to the street.[1] In some districts, agents of the Reserve Banks went so far as to petition banks not indebted to the Reserve institutions to reduce their street loans. Supplementing these activities were those of private organizations, among the most important of which was the New York Clearing House, whose good offices were enlisted. On Aug. 2, 1928, this body had decreed that members should not place loans on the street for "others" for less than $100,000. In place of the previous service charge of 5 per cent of the interest accruing on the loan, the higher charge (normally) was substituted of 0.5 per cent of the principal of the loan. Basing the service charge on the principal instead of upon the interest was calculated to have the effect of discouraging offerings by those who might desire a quick return of their funds.[2] To supply increased competition for the street loan, the Clearing House Committee also raised the rate to be paid by members on time deposits. Further aid in the campaign against the diversion of loans to the speculative market was had in the practice of Wall Street banks in increasing margin requirements on collateral borrowings.

[1] The letter of the Board to the Reserve Banks of Feb 2, 1929, stated: "There is evidence that member banks are maintaining speculative security loans with the aid of Federal Reserve credit. When such is the case the Federal Reserve Bank becomes either a contributing or a sustaining factor in the current volume of speculative security credit."

[2] The higher the rate realized on the loan the less, of course, would be the increased penalty of the new arrangement.

This resort to direct methods, as a means of restricting the speculative appetite for loans without handicapping other business, was, of course, a direct confession of the failure to right the situation by the utilization of the Reserve Banks' general powers. In order to avoid such an implication the warnings and the other communications of the Reserve Banks were so worded as to imply the responsibility of member banks for directing properly the placement of their loans.[1]

Regarding the success of these measures, the following facts may be noted:

1. Money rates of all types hardened considerably, but stock-exchange loans were affected most of all. In March, 1929, 90-day time loans had advanced to 7.75 to 8 per cent and average rates on call loans (new) to 9.80 per cent.

2. Total loans to brokers for the account of banks was checked. For the banks' own account a December, 1928, average of $1,114,000,000 was reduced to $1,071,000,000 in March, 1929. For out-of-town banks a street-loan figure of $1,760,000,000 in December, 1928, had fallen to $1,729,000,000 in March, 1929.

3. The preceding reductions in brokers' loans were much more than offset by an increase from the December to the March averages of $560,000,000 "for the account of others."

4. Shares traded on the New York stock exchange increased from 92,000,000 in December, 1928, to 110,000,000 in January, 1929, 77,000,000 in February, and 105,000,000 in March. Stock prices generally advanced until the recession in the last week of March.

[1] In its warning of Feb. 2, 1929, the Board said: "*A member bank* is not within its reasonable claims for rediscount . . . when it borrows . . for the purpose of making speculative loans.

The Board has no disposition to assume authority with the loan practices of *member banks*." See *Bulletin* for February, 1929, p. 93. Italics are the writers.

The degree of success realized in discriminating between security and commercial credit demands by the method of direct pressure was clearly moderate. To what, then, may the failure to accomplish more be attributed?

If our summary analysis be correct, the answer lies in the previous gradual pressure policy of the Reserve Banks. Rates in the security markets had risen by slow degrees to a point sufficient finally to attract funds from all parts of the world. Domestically the attraction of the New York market was manifested in the growth of loans "for the account of others." Internationally, the pulling force of New York money rates was indicated by exchange rates and gold imports.

With respect to gold movements, January, 1929, experienced a loss of $14,000,000 in the country's monetary gold stock, but in February the net gain was $26,000,000, and in March $34,000,000., In all continents of the world, discount-rate increases and other measures of credit restraint were required of central banks in order to protect the gold supports of their countries' currency systems.

The failure of business to slow down as a consequence of the security market's utilization of bank credit was exceedingly puzzling to many economists. In so far as attempts were made to find explanation for this development, the following facts were stressed.[1]

1. A good part of the funds dispatched to the street by "others" did not represent an equivalent withdrawal from industrial financial resources. The high rates in the street induced many corporations to draw down bank balances and place the funds on call. Such call loans were considered as the equivalent of deposits in bank.

2. Instead of depending upon bank borrowings so largely for working resources, many corporations took

[1] See following chapter for a more complete discussion of these matters.

advantage of the prevailing high prices on security issues to fund their short-term debts. To this extent funds withdrawn from industrial uses by the competition of street demands reäppeared in the financial resources of business corporations.

3. Every purchase of securities with borrowed money provides the seller with funds. The seller, located perhaps in the interior, receives what the security purchaser borrows. Only increases in security turnovers permanently sustained represented unmistakably "absorption" of bank funds.

But with rates constantly rising, it appeared to most observers that even the stock market could not forever resist the pressure of increased carrying costs. If a reaction must occur sometimes, would it not be desirable for it to take place before security prices had become further inflated? From this angle, many unbiased observers concluded that a security recession would be preferable to a continuation of existing tendencies. As previously indicated, such a recession did threaten to develop in the last week of March, 1929, and to this reaction and later events attention must next be directed.

X. THE MARCH, 1929, RECESSION AND SUBSEQUENT EVENTS

Early in March, 1929, indications of forthcoming strain in the money market were manifested by the appearance on the seventh and eighth of a call-renewal rate of 10 per cent. On Mar. 18, time-money rates rose to 8 per cent, the highest experienced since September, 1920. Commercial-paper rates rose to 6 per cent shortly thereafter and call rates skyrocketed to the panic figures of 15 and 20 per cent.

A number of factors contributed to this money-market squeeze. In addition to the spring credit demands of business and agriculture, to the rising demands of the stock market, and to the pressure

exerted by Federal Reserve Banks, there was also the influence of Treasury financing and preparations by business corporations for Apr. 1 interest and dividend disbursements. With respect to Treasury operations the March financing called for the distribution of $475,000,000 of nine months 4¾ per cent certificates to refund two maturing issues bearing interest at 3.875 and 3.375 per cent.

In the face of this money pressure the New York Times Annalist's average of 25 industrial stocks receded from 360 on Mar. 20 to 329 on Mar. 26.[1] Many predicted that the beginning of the end of the bull market had at last been reached. In this crisis, however, the New York banks stepped into the breach and helped to restore orderly trading by offering large sums, at high rates, in the call-loan market. This action, in so far as it involved Charles E. Mitchell of the National City Bank, called forth the most violent denunciations in the halls of Congress by Senator Glass, who asserted that as a director of the New York Reserve Bank Mr. Mitchell was endeavoring to nullify the efforts of the Reserve Board to curb the use of credit in stock-market operations. The only reply needed to refute Mr. Glass, a reply, however, which was not forthcoming in these terms, would have been allusion to the fact that the reserve administration itself had never subscribed to the theory that stock-market excesses required vigorous, suddenly imposed measures of restraint.

XI. THE FINAL FAILURE OF THE POLICY OF GRADUAL, BUT RELENTLESS, CREDIT PRESSURE

In April, 1929, stock prices receded somewhat, but in the following months another advance was begun which had the result of increasing the Standard Statistics Index of 337 Industrials from 195 in May to 216 in

[1] Low prices.

September. The volume of shares traded on the New York Stock Exchange also exceeded for every month in this period similar months in the preceding year. Loans to brokers reported by members banks in New York City expanded over a billion dollars, and about four-fifths of this increase represented loans placed for the account of "others." The stock market was clearly victorious in its combat with the Reserve Banks. Its final victory depended both upon the influence of its high rates in attracting funds from interior domestic sources and upon bringing gold from abroad. In the months under review —April to September, inclusive—the country's stock of monetary gold expanded $112,000,000.

Meanwhile the Reserve Banks maintained sufficient pressure to thwart expansive tendencies so far as the total volume of reserve credit was concerned. From April to September,[1] total loans and investments expanded a little less than $260,000,000 and member bank reserve balances remained almost stationary. The salutary influence of the Reserve Banks was confined to the endeavor to avoid excesses outside the realm of security operations and to keeping banks in New York City, particularly, in a position to obtain funds to meet possible large demands for the return of funds to the interior. But, so far as the stock market was concerned, hope was abandoned of restoring moderation to its credit demands. Correction now could be had only in permitting speculation to break of its own excesses.

In their endeavors to prevent further excessive credit expansion in general, the Reserve Banks kept their holdings of government securities low. By Aug. 9, 1929, the Board had given belated permission to the New York Reserve Bank to increase its discount rate to 6 per cent. The effect of any such action had of

[1] In terms of monthly averages of weekly figures. April is contrasted with September because the "seasonal" positions are somewhat similar.

course long since been discounted. At the same time as also previously, on July 12, in order to prevent such restrictive action from interfering unduly with agriculture and commerce, buying rates in New York on acceptances were reduced. These manipulations supply one of the few instances in the history of the system in which different weapons have been utilized in contrary directions. Usually the practice is to utilize all weapons in a similar manner, either for the purpose of inducing restraint or for the purpose of creating ease in the credit market. The contrary use of the different weapons at this time was due, of course, to the earlier policy of refraining from increasing the discount rate.

This hasty sketch of events preceding the stock-market collapse of October, 1929, leaves little doubt regarding the ineffectiveness of reserve policy. The Reserve Banks simply failed to accomplish their admitted purpose. But should their purpose have been what it was avowed to be? On what counts, if at all, should the Reserve Banks have concerned themselves with the security market's use of credit? What are the relationships of security credits to other forms of credit? What kind of restrictive measures, if any, should the Reserve Banks have employed? Answers to such questions require a more analytical and statistical type of treatment than has thus far been provided.

CHAPTER V

CRITICAL ANALYSIS OF FEDERAL RESERVE POLICY IN 1928 AND 1929

I. THE PROBLEM

In the *Bulletin* of February, 1929,[1] the Federal Reserve Board said:

> The Federal Reserve Board neither assumes the right nor has it any disposition to set itself up as an arbiter of security speculation or values.

It would seem, then, that, according to this pronouncement, neither advances in security prices nor increases in the number of shares traded provide in and of themselves ground for remedial action on the part of the Reserve Banks. It is only when the security market's use of bank credit tends to interfere with the ability of the Reserve Banks to supply the desirable amount of credit on not too costly terms to industry, agriculture, and commerce that corrective action is necessitated.

In the opinion of the Board, however, the security market's use of bank credit in 1928 had interfered with the proper provision of credit for commerce and agriculture. Thus, in the warning of Feb. 2, addressed to member banks, the Board said:

> The *extraordinary absorption of funds*[2] in speculative loans, which has characterized the credit movement during the past year or more, in the judgment of the Federal Reserve Board, deserves particular attention lest it become a decisive factor working toward a still further firming of money rates to the prejudice of the country's commercial interests.

[1] P. 93.

[2] Italics are the writer's.

What, however, is the precise meaning of "absorption of funds in speculative loans?" Should it be taken to imply that the credit that is employed in security operations is made unavailable for other uses? In other words, does the security market's use of bank credit represent just as clear a withdrawal of funds from industry and agriculture as if gold were sent abroad or the volume of reserve credit reduced? On the other hand, the Board may have believed that speculative use of credit (in 1928) was to be regarded merely as an undesirable meandering of credit to a field from which return routes to agriculture and commerce are devious and difficult. According to this latter interpretation what was to be complained about was the process by which credit came into the possession of farmers and other business men.

The Board's warning of the second of February, 1929, was so worded as to indicate that in its opinion speculative demands had been working other mischief than merely to complicate the routing of credit to industry and agriculture. Thus:

> The resources of the Federal Reserve System are ample for meeting the growth of the country's commercial needs for credit, provided they are completely administered and protected against *seepage*[1] into uses not contemplated by the Federal Reserve Act.

In view, then, of this language, our first task is to find out what we can about the effect of the security market's employment of credit upon industry and commerce in the period in which we are here interested—from, say, the beginning of 1928 to the autumn of 1929. Before utilizing mass statistics to throw light on this question it may be helpful to examine a few of the specific transactions which seem to represent the diversion of funds from commerce and agriculture.

[1] Italics are the writer's.

II. HYPOTHETICAL CASES

A. Purchase by a New York Corporation of Brokers' Paper with a Deposit Account Which Otherwise Would Not Be Employed for a Time.

A business corporation has a deposit account in Bank A of New York City of $100,000. The corporation instructs Bank A to purchase brokers' paper for the amount of $100,000. This purchase will be paid for by debiting the corporation's account with Bank A. Assuming that the paper comes from the Bank's own portfolio, the corporation's loan assets will be increased $100,000 and the bank's loans will be decreased $100,000. The bank's deposits will be reduced $100,000. This reduction of deposits will release $13,000 of reserve money. This $13,000 will enable New York City banks as a whole to grant deposits in new lending operations for an additional $100,000. When this is done, total loans of New York City banks will be as large as they were before the corporation decided to employ its free bank account in this way and the corporation's loan of $100,000 will represent a sheer addition to the amount of money available to the market.

To show how the saving of $13,000 of reserve money in the above illustration might subsequently permit both deposits and loans to increase $100,000, assume that at once Bank A grants deposits and make a loan of $100,000. The next day checks are written against this account and deposited with other banks to the amount of $10,000. Bank A is then required to reduce its deposits by calling loans to the amount of $76,923.07. But other banks which gain this sum of reserve money by collecting the checks drawn against Bank A are in a position to lend and increase their deposits in the process by the same amount.[1] Call the banks

[1] If subject to the 13 per cent reserve requirement.

which do this B, C, and D, The following day checks are written against B, C, and D for $5,000 and deposited with E, F, and G. B, C, and D must now reduce their deposits by $38,461.53. E, F, and G are in a position to increase their deposits by $38,461.53. A combined balance sheet would then show increased deposits for Bank A of $23,076.93, for B, C, and D of $38,461.53, and for E, F, and G of $38,461.53. In the course of time further redistributions of deposits will take place.

In the beginning, the broker's paper might have been purchased for the corporation by Bank A in the open market. The check given by Bank A for this paper, when cleared, would tend to establish for Bank A a reserve deficiency of $100,000. To reestablish this reserve, Bank A would be obliged, perhaps, to call another loan of $100,000, a call which would provide it with a check for $100,000 to clear against some other bank. In this way the result would be the same as if Bank A procured the paper from its own portfolio. Just as before, however, the corporation's account with Bank A is reduced $100,000, reserves of $13,000 are released, and the bank is put in a position to increase its deposits by $100,000. In the course of time these deposits may be distributed among other banks.

In either of the above operations, without any actual increase in reserves, or deposits, banks were enabled to maintain their former volume of loans, and the corporation's purchase represents a sheer addition to the market's credit. Explanation of this seeming paradox is to be found, of course, in the assumption that the corporation would otherwise have kept its bank account unemployed. But it is not altogether unrealistic to make this assumption. Without an attractive call-loan market, the corporation might have preferred to draw a minimum interest at a bank instead of making a time commercial loan of some description or other.

B. Purchase of Brokers' Paper by a Corporation with a Deposit Account in an Out-of-town Bank.

A manufacturing corporation in Buffalo, N. Y., with a temporarily idle bank account in Buffalo, decides to lend \$100,000 on the street. If this corporation had connections with a New York bank it might accomplish this object by building up its account in Bank A of New York City and instruct Bank A to buy for it brokers' paper. To build up its account in Bank A, New York, the corporation deposits there a check for \$100,000 against Buffalo. When this check is cleared, the Buffalo bank's reserve will be diminished \$100,000 and the New York bank's reserve will be increased \$100,000. The Buffalo bank's deposits will also be reduced \$100,000. With a 10 per cent reserve requirement, the Buffalo reserve will tend to be deficient by \$100,000 minus \$10,000, or \$90,000. This deficiency, we shall assume, the Buffalo bank restores by calling a street loan which is paid for by a check drawn against Bank A of New York City for \$90,000. Buffalo deposits are now reduced \$100,000, Buffalo loans are reduced \$90,000, and Buffalo reserves are restored to the necessary figure.

In New York Bank A's deposits are increased \$100,000 when the Buffalo corporation makes its deposit. This addition to its deposits increases its need for reserve money by \$13,000. But in collecting the corporation's check against Buffalo, \$100,000 of reserve is gained. Thus far Bank A is ahead \$87,000 of reserve money. But this gain is more than wiped out by the collection against Bank A of the check for \$90,000 drawn by the brokerage house against Bank A, when Buffalo calls the brokers' loan. The net deficiency of Bank A's reserve at this point is \$3,000.

The Buffalo corporation, however, has a deposit with Bank A which it checks against in paying for its

brokers' paper of $100,000. When the corporation makes this loan, total loans are $10,000 in excess of their volume at the close of the preceding paragraph. In this operation, also, the deposits of Bank A are reduced $100,000 and $13,000 of reserve money is freed. This $13,000 offsets the previous reserve deficiency of $3,000 by $10,000. On the basis of a release of $10,000 in reserves, New York banks as a whole will be in a position to increase deposits and loans further to an amount of $76,923. This makes the net increase of loans $86,923. Thus:

Loan Transactions

1. Buffalo loans are reduced when it restores its reserves depleted by the corporation's transfer of its account to New York by the amount of..........................	$ 90,000
2. In New York the corporation's loans are increased, when it buys brokers' paper by the amount of...............	$100,000
3. When the corporation's deposits are charged $100,000 reserves are freed of $13,000. This offsets the previous reserve deficiency of New York banks by $10,000 and enables them to grant new deposits and make new loans to the amount of ...	$ 76,923
4. Net increase in loans is therefore....................	$ 86,923

Although we are not so much interested in deposits rearrangements, it will be helpful to summarize them also. Thus:

Deposits Transactions

1. In Buffalo, as a result of the deposit of the corporation's check in New York, there is a reduction of	$100,000
2. In New York, as a result of the deposit there of the corporation's check, there is an increase of deposits by the amount of...	$100,000
3 In New York the corporation's deposit is reduced when it makes a street loan by the amount of..................	$100,000
4. In New York the broker's deposit is increased, when above loan is made by the amount of.......................	$100,000
5. In New York the broker's deposit is reduced when the Buffalo bank calls its loan by the amount of..............	$ 90,000
6. In New York the released reserves enable new deposits to be granted to the amount of.........................	$ 76,923
7. The net reduction of deposits, attributable to the higher reserve requirements of New York City banks, is.	$ 13,077

In other words, even though deposits have been reduced for the whole banking system by $13,077, brokers got the use of $86,923 more than they otherwise would have had. This increased volume of advances to brokers means merely the utilization of an otherwise idle bank account.

C. The Return of Funds Dispatched to the Street to an Out-of-town Commercial Use.

It is assumed that another corporation with its head office in New York has a plant in Buffalo. This corporation decides to float a stock issue for the purpose of obtaining funds for plant expansion in Buffalo. The buyers of its stock purchase it on the margin and in this way transfer to the corporation all of the $76,923 lent to brokers at the close of Case B. The corporation immediately checks this credit over to its account in Buffalo. In this operation the New York Bank's reserve is lessened by this amount, but its reserve requirement is reduced 13 per cent of $76,923, or $9,999.-999. $76,923 – $9,999.999 is $66,923. Buffalo, however, gains $76,923 in reserve. Since its deposits increase by a similar amount, the released amount of the Buffalo bank's reserve is $76,923 – 10 per cent of $76,923, or $69,230.70. With this surplus reserve Buffalo instructs New York to buy for it brokers' paper. The collection of a check for this amount by New York offsets the New York bank's previous reserve deficiency of $66,923 by $2,307.70. This volume of reserve money will be sufficient to enable New York banks to grant deposits in new lending operations by $17,751.54.

The net results of these operations are then that the corporation has $76.923 to spend in Buffalo, and brokers' or other loans have increased still further in New York by $17,751.54.

The above operations may not be completely realistic in that they assume the corporation to obtain funds for industrial spending in Buffalo directly by selling new issues to investors. Underwriters and bankers will presumably have advanced the funds to the corporation before the issues are distributed. But further underwriting will be impeded if there are undigested securities, and, therefore, the above illustration may portray the final results accurately.

Assuming that the $76,923 lent to the brokers at the beginning of this case was the same $76,923 of loans which proceeded from the decision of the corporation in Case B to invest on the street instead of keeping its account idle, the growth of brokers' loans accompanied the process of providing industry with credit which it would not otherwise have obtained. The same results might also have come about in another way. Instead of the corporation's selling new issues, the borrowing brokers' buying clients might have purchased old issues from Buffalo investors, and the funds thus procured might have been spent in Buffalo.

D. Miscellaneous.

Local clients of a Syracuse bank request $100,000 of credit for ordinary business operations. It is assumed that, were it not for the attractiveness of the street call-loan market, their applications would be granted. As it is, however, Syracuse commercial demands are denied and security dealers get the use of the credit instead.

Enough has been shown in the analysis of previous cases, however, to indicate that this drain of credit from Syracuse might be only temporary. If the broker who borrowed the funds dispatched to the street made them available to a corporation floating a new issue, the funds might come back to Syracuse or to some other

interior community by processes described in Case C, and they might be expended in commercial or agricultural operations with no appreciable loss of time. The cost of reacquiring the funds by these processes might possibly be increased. The effect of security demands upon the cost of credit for other uses will be discussed later.

If credit dispatched to the street participates in a large number of security turnovers, a considerable period of time may intervene before the credit returns to an industrial or agricultural use. But the volume of security turnovers does not by itself prove any withdrawal of bank credit from other demands. On the street credit is used with great efficiency, proceeds of sales to some are employed to cancel obligations to others, and credit has a rapid turnover. Even a continuous increase in security trading does not necessarily destroy the availability of credit, when required, for other uses. The security market may have succeeded only in acquiring more credit for periods during which the credit might have been stagnating in idle bank accounts. On the other hand, security demands may be at the expense of the credit requirements of commerce and agriculture. To determine what were the effects in 1928 and 1929 of the security market's use of bank credit, it will be necessary to do more than analyze individual transactions.

III. STATISTICAL ANALYSIS

It has just been indicated that a large volume of share turnovers on the security exchanges does not prove the sustained withdrawal of credit from other uses. Nevertheless, a high aggregate of security turnovers is one of the conditions essential for the positive absorption of credit in security transactions. We

may accordingly begin the statistical analysis by showing the number of shares traded on the New York Stock Exchange by months from 1926 to 1929. Thus:

TABLE XXV.—SHARES TRADED ON THE NEW YORK STOCK EXCHANGE

	1926	1927	1928	1929
January	38,987,885	34,275,410	56,919,395	110,805,940
February	35,725,989	44,162,496	47,009,070	77,968,730
March	52,271,691	49,211,663	84,973,869	105,661,570
April	30,326,714	49,781,211	80,478,835	82,600,470
May	23,341,144	46,597,830	82,398,724	91,283,550
June	38,254,575	47,778,544	63,886,110	69,546,040
July	36,691,187	38,575,576	39,197,238	93,378,690
August	44,491,314	51,205,812	67,191,023	95,704,890
September	37,030,166	51,576,590	90,578,701	100,056,120
October	40,437,374	50,289,449	98,831,435	141,668,410
November	31,313,410	51,016,335	115,360,075	72,455,420
December	41,973,806	62,092,302	92,837,350	83,861,660
Year	450,845,255	576,563,218	919,661,825	1,124,991,490

Total share turnovers for 1928 exceeded those of 1927 by almost 60 per cent. In the first nine months of 1929 share transactions on the New York Stock Exchange exceeded those of the same nine months of 1928 by 35 per cent.

But how was this growing volume of share turnovers financed? Three possibilities must be examined. In the first place, the credit employed in the security markets may have represented an actual increase in the country's supply of bank credit. Inquiry will be made later into this phase of the 1928–1929 situation. Secondly, there may have been no considerable expansion in the total supply of bank credit, but the security markets may have obtained their credit at the expense of other business. In the third place, more intensive use may have been made of the existing supply of

bank credit. In other words, the velocity of circulation of bank credit may have increased.

Despite the inclusion of a velocity symbol in the equation of exchange, economists in late years have failed to give it much emphasis in their practical measurements. So far as their purpose has been to account for changes in the general level of commodity prices the discarding of velocity analysis is easily explained. Income restrictions limit the extent to which in purchases of consumable goods the dollar's turnover can be enlarged. If the consumer spends the greater part of his income on consumers' goods early in his income period, he has that much less to spend in the latter part.

Expenditures on securities, however, or for that matter on any resalable object, are not so closely restricted by income limitations. A security purchased today may be sold tomorrow and the proceeds employed to purchase another security on the following day. In the course of a month the investor, with an initial capital of $1,000, may easily purchase $10,000 of securities without borrowing a cent. Shares purchased today may be sold to produce spending power tomorrow, but this is not true of beefsteak consumed. Velocity may be a factor quite as important as the credit supply in the financing of security turnovers.

But what specific operations connected with the security market accelerate velocity? In the hypothetical cases considered it appeared that loans on the street "for the account of others" enabled otherwise idle credit to get into active use in the security markets. It would thus seem pertinent to inquire next into the relative importance of loans for "others" in 1928 and 1929. The following table shows the percentages for each month from 1926 to October, 1929, that street loans for others were to the total reported by New York City member banks:

TABLE XXVI.—PERCENTAGE OF LOANS TO BROKERS FOR ACCOUNT OF OTHERS TO TOTAL REPORTED BY NEW YORK CITY MEMBER BANKS
(Monthly averages)

Month	1926	1927	1928	1929
January	18 7	26.6	26 0	45.0
February	19.4	27 5	29 5	47 8
March	20.5	29 2	33 1	50.6
April	21.4	28.1	30 6	52.8
May	22 0	27.4	34.2	53.9
June	23 8	27.5	39 8	54.6
July	24 7	28.3	41 2	51 2
August	25 7	28 5	44 1	54.2
September	24.5	28 0	43 5	55.6
October	26.9	28 3	43.5	55.4
November	28.6	28 7	44.0	
December	28.3	26 5	44.0	

As the number of share turnovers increased so also did the relative importance of "other" loans in the New York market.

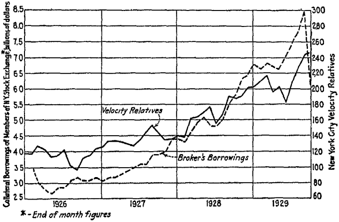

CHART A[1]

We have, however, in the computations of the New York Reserve Bank relatives for velocity obtained

[1] The curves for 1929 cover the first ten months only.

directly by relating bank debits to bank deposits. In 1928 and 1929 did New York City velocity relatives show any considerable expansion? And, if so, how closely did the increase of velocity relatives correspond with the growth of borrowings by the members of the New York Stock Exchange? Light on this question is thrown by the chart on page 165.

The parallel movement of brokers' collateral borrowings and of velocity relatives is marked. The movement of velocity relatives also shows a close direct correspondence to that of the total shares traded on the New York Stock Exchange: Thus:

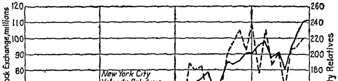

CHART B[1]

It is to be admitted, however, that the movement of velocity relatives is open to two opposing interpretations. It was necessary to show an increase in velocity relatives as the security markets' use of credit increased if, in the absence of any considerable enlargement in the credit volume, the conclusion was to be avoided that the credit employed on the street was at the expense of other business. Without an increase of velocity relatives there must have been an absorption of credit in security transactions. But credit which otherwise might have been employed by commerce and agriculture may have

[1] The curves for 1929 cover the first ten months only.

gone to the street and raisedthe velocity averages both because of the rapid turnover of the average dollar thus used and because of the large amount of credit so employed.

But if a large amount of credit went to the street and did not tend to return, the relative importance of New York City bank deposits would be expected to increase. In 1928 and 1929, did it? Light on this question is supplied by the figures of the following table:

TABLE XXVII.—PERCENTAGE THAT TOTAL TIME AND DEMAND DEPOSITS OF NEW YORK CITY BANKS ARE OF THE TOTAL DEPOSITS OF ALL REPORTING MEMBER BANKS[1]

Month	1927	1928	1929
January	31 9	32 7	32 9
February	31.2	32 3	33.3
March	31.5	32.2	33 5
April	31.5	32 6	33 6
May	31 2	32 7	33 7
June	32 6	32 3	34.2
July	32.1	32.0	33 6
August	31 9	31 5	33 9
September	31 7	31 5	34.2
October	31.6	31.1	34.7
November	32.2	32.0	
December	32.5	32.1	

[1] Monthly averages of weekly figures were employed

These figures seem to show that about as rapidly as accounts were being transferred to New York for the purchase of brokers' paper they were employed in such a way as to be redistributed over the country. New York City's percentage of the country's bank deposits was not much larger in October, 1929, than it was in January, 1927.

Evidence of a somewhat similar character is portrayed on the following chart, which compares the course of the

collateral borrowings of members of the New York Stock Exchange with the total time and demand deposits of New York City banks.

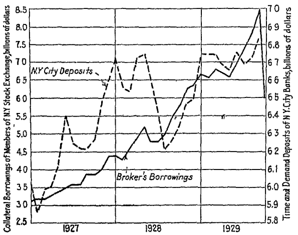

CHART C[1]

This chart reveals that New York City total deposits were no larger in January, 1929, than in January, 1928. But in this year brokers' borrowings increased \$2,000,000,000. Again, brokers' borrowings increased from January to September, 1929, by about \$2,000,000,000. In the same period of time, New York City deposits experienced a slight decrease. Judged by the test of the location of bank deposits the speculative frenzy of 1928 and 1929 did little to deprive customers of out-of-town banks of credit.

The following chart indicates also that there were many divergent movements between the volume of New York City deposits and the number of shares traded on the New York Stock Exchange. Explanation of such divergent movements as are revealed may be found, in part, in the greater economy in the latter part

[1] The curves for 1929 cover the first ten months only.

of the period in the use of credit in stock-exchange operations and in the increasing availability of New York City deposits for street use during their otherwise idle periods.

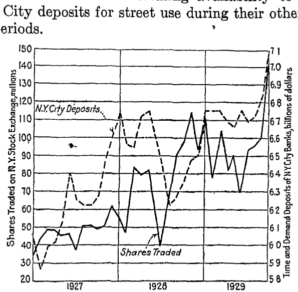

CHART D[1]

Further statistical representations of this character might be offered. But enough has probably been presented to indicate that the charge of absorption of credit in stock-exchange uses rests on dubious ground when supported by figures of brokers' borrowings, bank deposits, security operations, and velocities. Accordingly, another type of approach may be followed. Can the rising cost of credit for commerce and agriculture in the period under survey be ascribed to any other factors than the diversion of credit to the security markets?

The extent to which credit costs to small borrowers and farmers increased in 1928 and 1929 is difficult to portray accurately in statistical terms. But the increase in commercial-paper rates in New York City

[1] The curves for 1929 cover the first ten months only.

in the months under examination is sufficiently great to render unnecessary, perhaps, the presentation of elaborate figures. Thus:

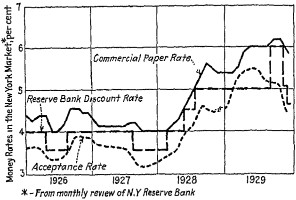

CHART E

Our present problem, then, is to determine, if we can, factors other than security demands, which may have been responsible for the rising money rates of 1928 and 1929.

The demand for bank credit to move the country's goods depends upon the physical volume of trade and upon the prices at which goods are exchanged. There are of course many indices of trade and production but none which is a thoroughly satisfactory measuring stick of the need of credit. Carl Snyder's Index of the Total Volume of Trade is corrected for secular trend and on this account alone cannot be accurately compared with figures of the credit volume not similarly adjusted. The Board's Index of Industrial Production is corrected only on account of seasonal fluctuations and therefore may be compared with statistics of credit movements which are adjusted for seasonal variations. On the other hand, it would be expected that the Index of Industrial Production, in the prosperous months of

1928 and 1929, would exaggerate the increase in the total volume of trade. But if we do not insist on too high a degree of exactitude we may gain a rough impression of the presumed credit requirements of industry in 1928 and 1929 by observing the curves of the following chart. The Board's Index of Industrial Production reveals principally output accomplishments: car loadings primary distribution; department store sales secondary distribution. All of the curves are adjusted for seasonal variations. Thus:

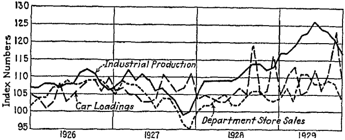

CHART F[1]

The Index of Industrial Production increased in 1928 a little less than 5 per cent over 1927, and in the first three quarters of 1929, it increased 11 per cent over the first three quarters of 1928. Freight-car loadings in 1928 showed no advance over 1927 and in the first three quarters of 1929 averaged 5 per cent in excess of the same period of 1928. Department store sales are not averaged because not all of the data plotted represent revised figures. As far as the physical volume of trade is concerned, 1928 and 1929 imposed a somewhat greater burden upon the country's credit resources than 1927.

To give some indication of price movements, the following chart traces by months since 1926 the courses of the Bureau of Labor's All Commodity Price Index, of the Department of Agriculture's Index of Farm Prices, and

[1] The curves for 1929 cover the first ten months only.

of the New York Reserve Banks' Index of General Prices.

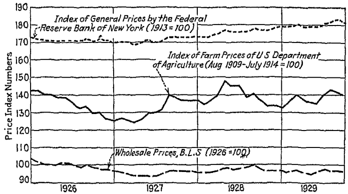

CHART G[1]

Of these three price indices the New York Reserve Bank's General Price Level Index probably reveals most accurately the need for credit, as far as price changes are important. In 1928 the G. P. L. averaged almost 3 per cent higher than in 1927 and in the first three quarters of 1929 almost 3 per cent above the same period for 1928. Price indices also evidenced an increasing strain upon the country's credit resources in 1928 and 1929.

With these figures relating to the growth in the demand for bank credit we need to compare the actual expansion in the bank-credit volume. The principal difficulty in the way of statistical representation of the bank-credit supply arises from complications due to seasonal variations in the demand for credit. Since the changed conditions created by the World War, experience has possibly been too short to construct accurate indices of seasonality in the volume of bank credit. In too many years it would be impossible to determine how much of the bank-credit expansion was attributable to seasonal and how much to cyclical factors. Employing, however, a method used by Carl Snyder of finding the increase or decrease of the total loans and investments of reporting

[1] The curves for 1929 cover the first ten months only.

member banks over the sixth previous month, [1]and expressing the percentage change in terms of an annual rate, we have the following figures for 1928 and 1929:

TABLE XXVIII.—PER ANNUM RATE OF GROWTH IN LOANS AND INVESTMENTS OF REPORTING MEMBER BANKS

1928		1929	
January	+10 6	January	+2.8
February	+ 9.4	February	+4.0
March	+ 8.2	March	+5.4
April	+ 9.8	April	+4.1
May	+ 9.8	May	+2.0
June	+ 6.8	June	+0.2
July	+ 4 6	July	+1.4
August	+ 4 6	August	+1 8
September	+ 2.4	September	+1.4
October	− 0.04	October	+6.4
November	− 1.4		
December	+ 1.1		

In view of the fact that the average expansion of reporting member-bank credit since 1919 has been about 4.5 per cent per annum, it can only be concluded that credit growth throughout most of 1928 and 1929 was below the usual. But, as indicated in the hypothetical cases, loans may increase without a corresponding enlargement of bank deposits. After all, it is bank deposits which are employed by means of checks, as our principal exchange media and loans and investments have been generally utilized to measure credit growth only because of their general correspondence with deposits. On the other hand, total deposits offer some difficulties to the statistician principally because shifts from demand to time deposits alter reserve requirements. But it should be helpful to learn the evidence of member-bank deposits.

[1] The advantage of this procedure is that the standard of comparison is not so far removed from the current month as if yearly differences were employed. Possibly six-months' intervals pair months whose normal seasonal positions do not vary greatly.

To portray the trend of deposits' growth in 1928 and 1929 we may consult the figures of member-bank reserve balances. It is upon reserve accounts that deposits are based, and, as previously indicated, seasonal variations produce a minimum of disturbance in the course of reserve balances.

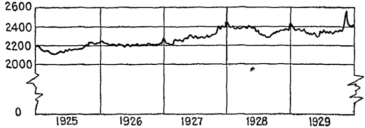

Chart H

Until after the October panic of 1929, member-bank reserve balances receded from the high position reached at the close of 1927. These figures support the previous conclusion that the rate of credit expansion in 1928 and 1929, if not nil, was at least unusually low. Taken in conjunction with the enlarged volume of trade and the rising tendencies in general prices evidence of restricted credit growth goes far to deny the thesis that we must look principally to speculative use of credit to find adequate explanation of the rising tendency of money rates in 1928 and 1929.

There are other grounds on which the security markets might be defended against the charge that their use of credit resulted in a considerable withdrawal from other uses. Higher money rates may represent quite as much an increasing disposition of commercial borrowers to pay as of a restricted supply of credit. More realistically, the rising street rates placed bankers everywhere in a stronger bargaining position. Customers higgling for low interest charges could be shown figures of rates prevailing on the street. If the customer accepted a higher interest charge he got his credit just as thoroughly

as if the rate had been lower. And general business conditions may have made it easier to pay the high rates of 1928 and 1929 than market movements in, say, the depression months of 1927 enabled the lower rates then prevailing to be withstood. The assumption that high rates indicate a more restricted supply of credit than can be explained by commodity price and trade movements possibly illustrates the economic fallacy of confusing static with dynamic analysis.

There is no question but that rising commercial rates in 1928 and 1929 imposed little burden on many of our larger corporations which chose to employ the securities market as a substitute for short-term borrowing. In 1928 and 1929 the public was so willing to pay for rights to participate in future anticipated increases in earnings that powerful corporations found their financing costs perhaps never cheaper. In terms of earnings' equities the investor was in a mood to pay unprecedented prices for what he got. From the standpoint of the corporation the distribution of these high priced long-term issues was more than the equivalent of cheap short-term credit.

The enormous extent to which in 1928 and 1929 corporations took advantage of the public's appetite for stocks to raise cheap capital is indicated by the following figures:[1]

TABLE XXIX.—CORPORATE STOCK ISSUES
MONTHLY AVERAGE FOR YEAR
(Thousands of dollars)

1922	51,999
1923	61,330
1924	72,191
1925	109,248
1926	109,814
1927	146,573
1928	297,998
1929	572,132

[1] *Cf. Survey of Current Business*, February, 1930, p. 130.

Does the evidence then indicate that the Federal Reserve Board should have receded from its position that speculative uses of credit were depriving industry and agriculture of their normal allotment? In our opinion, the Board's position cannot be sustained. But this does not mean that the Board had no ground for anxiety on account of speculative developments. The real cause of apprehension, and one which, if acknowledged, would have put the Board in even a stronger position to engage in remedial action, was the fact that the system's control over the credit volume was endangered. Speculative operations did not result in a runaway credit market, but they threatened to. From 1921 to 1928 a 4 per cent rate at the New York Reserve Bank had generally led to credit contraction. But in 1928, three short-intervaled increases in the New York rate to 5 per cent, the highest rate attained since the fall of 1921, led neither to general credit contraction nor to a subsiding of the speculative market's demand for credit. And these increases of the discount rate were supported by large sales of government securities. Finally, when money rates rose to a point attracting gold from outside markets, the reserve system's control was precarious indeed. The facts do show that even the gold inflow failed to develop into excessively rapid credit expansion. But the Reserve Banks were forced to exert more vigorous efforts to prevent a runaway credit market than was consistent with high prestige. Threatened loss of credit control was the real source of apprehension, and speculative use of credit had to be checked, not because such credit was made unavailable for other uses, but because speculative demands threatened an excessive expansion of credit in general. The right culprit was indicated but on precisely the wrong counts.

IV. REMEDIES

In the previous section we have inclined toward the position that the mischief of the 1928–1929 speculative frenzy was to be found principally in the acceleration of expansive tendencies in the whole credit volume, to combat which required measures of restraint to be employed for a prolonged period of time. It was further argued that in order to indict the security market as the unruly element in the business situation it was not necessary to argue "credit absorption." Without insisting that the security market's demands had led to the sustained withdrawal of credit from other uses it could be maintained that the market's credit appetite must be restricted.

But how? In view of the fact that the problem persisted so long, a considerable faction was won over to the position that the Reserve Banks must be provided with special powers to curb the security market's demands. The implication that such powers were necessary was intimated by the wording of the Senate's resolution in February, 1929, requesting the Board

> . . . to give the Senate any information and suggestions that it feels will be helpful in securing legislation necessary to correct the evil complained of and prevent illegitimate and harmful speculation.

To which the Board replied

> . . . that it could count upon the cooperation not only of the Federal Reserve Banks but of leading member banks everywhere in the country . . . to bring an orderly readjustment of the credit situation.

But as a consequence of the subsequent failure of the Reserve Banks in the following months to restrict the use of the bank credit by the security markets, the proponents of special methods of combatting street demands became even more articulate.

Suggestions put forward to render the security markets more susceptible to the desires of the reserve banking administration were numerous, varying from the proposal that the Reserve Banks pay interest on reserve balances (and thus increase the competition with the street loan) to the device of bringing pressure upon the New York Clearing House to restrict the facilities of members in the placement of street loans for out-of-town correspondents. As a means of reducing the disinclination to sell of security holders with large paper profits, President Mitchell of the National City institution[1] urged the removal by Congress of the income tax on gains resulting from the sale of securities. It was argued by Mr. Mitchell that this device would improve the technical correctness of the market and serve to abate the bullish fever. Congressman McFadden of the House Banking and Currency Committee went as far as to suggest placing the supervision of street loans with the Reserve Banks.

But the proposal which aroused the most attention in banking circles was that of imposing a penalty discount rate upon member banks whose portfolios contained any large amount of street loans.

The argument for the penalty discount rate was advanced by Prof. O. W. H. Sprague in the following words:[2]

> To curb the demand of brokers for credit, it is necessary to destroy the confident belief that additional funds will always be forthcoming in response to an advance in rates. This can be readily accomplished by the addition of a simple provision to the Federal Reserve act, authorizing, or perhaps directing, the Reserve Banks to impose a rate 1 per cent higher than the call renewal rate upon rediscounts for member banks that are lending on the Exchange at the time the accommodation is secured. If need be also a minimum borrowing

[1] See Special Edition of its issue of Apr. 18, 1929.

[2] *New York Times Annalist*, Oct. 19, 1928, p. 599.

period of seven days might be established. Under these arrangements, the call loan for banks would become once more a quasi-reserve, a means of employing surplus funds which would be immediately withdrawn whenever it was necessary to restore impaired reserves. Ingenious devices to escape the burden of this penalty rate would doubtless be employed but it may be confidently predicted that they would be impossible of general application. Consider, for example, the probable effect of this proposal if it could be employed in the present situation. Member banks are now rediscounting nearly a billion dollars at the Reserve Banks and the call renewal rate is 8 per cent. We do not know the amount of the brokers' loans made by these borrowing banks, but it is a safe assumption that as much as half of these rediscounts would be subject to a 9 per cent rate. Would the optimistic operator in stocks continue to bank upon the possibility of a further increase in brokers' loans? No answer is needed.

With suggestions of this sort the writer has a considerable amount of sympathy. Had the Reserve Banks in 1928 and 1929 been in a position to impose heavy discount charges upon institutions having funds on the street, the situation might have been brought much more easily and quickly under control. But it must always be remembered, on the other hand, that a device admirable to employ under some conditions might work poorly under others. Especially likely to abuse, the author believes, such special powers would prove to be if once they should become engrafted in legislation.

The writer is willing to agree that security operations are peculiarly likely to develop inflationary dangers and on this account special curbing measures seem necessary. In a period of increasing business optimism, rising security prices encourage corporations to fund short-term borrowings and perhaps to enlarge considerably in excess of current needs their supplies of working capital. Upon the successful consummation of such operations, corporations are no longer subject to the restraining influence of ordinary measures of credit control. A general tendency may develop to carry through expansion projects which

otherwise might be postponed to the morrow. There is here the special danger that so much building and construction work will be pushed forward and completed that after a possible turn in business sentiment there is little upon which a revival may feed. During the boom, furthermore, the distributed issues of such corporations comprise the collateral for multitudinous small borrowings, and in this way a vast amount of pyramiding of credit is encouraged. The Reserve Banks in such a situation may find the demand for their credit so great as to be irresponsive to ordinary measures of restraint. Applying this to the 1928–1929 situation, it was undoubtedly the unprecedented volume of new issues which kept the pressure upon the Reserve Banks so intense despite the exceptionally high rates on most classes of short-term borrowings.

Before concluding, however, that the threat of rising security issues may become so great as to necessitate special measures of control, some thought should be given to the question of how, if fortified by such curbing powers, the Reserve Banks would fare in periods of recessionary tendencies in business. In periods of reaction it is in the improvement of the securities market that one of the principal forces of revival is ordinarily to be found. Commodity prices may decline with accelerating force, so also may physical outputs and intangible gloom, but in a gold-standard country there is a limit, fixed by reserve requirements, to the extent to which the credit volume may contract. Banks over the country, as they develop surplus reserves, and do not find the commercial credit demand brisk, are led to seek the securities market in order to find an outlet for their extra lending power. In the course of time, ease of long-time credit leads to increased industrial spending, thence to increased employment, and so on through the remaining phases of revival. In other words, it is likely to be principally

upon the security markets that the Reserve Banks must depend in their endeavors to increase the utilization of bank credit, on needful occasions, by the business world.

All of this doctrine, with some modification and refinement, has been worked out with a great deal of detail for prewar years by the Harvard Economic Committee. That it cannot be easily disproved in more recent years is suggested by the following charts, the first of which represents the per annum rate of member-bank credit expansion since 1921, and the second of which reproduces D. W. Ellsworth's seasonally adjusted curve of new corporate issues.[1]

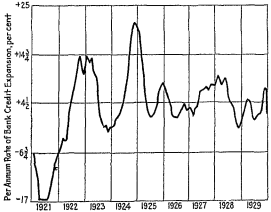

CHART I

In Chart J the upward trend of new corporate issues is marked. Ignoring the trend, temporary high points are visible in the fall of 1922, the late summer of 1924, the close of 1926, and the late fall of 1927. By scanning Chart I, it will be observed that these peaks are reached at about the same period of time as those in which the

[1] Chart I is reproduced through the kind permission of Carl Snyder of the New York Reserve Bank, who prepared it for private distribution.

Chart J appeared in the *New York Times Annalist* of Oct. 25, 1929, p. 813. Permission to reproduce has been courteously granted by the *Annalist.*

curvc of the rate of member-banks credit expansion attains its temporary maxima. The only serious exception to the general correspondence in time, of the high points of the twe curves, is to be found in 1928 and 1929 when so many unusual developments were recorded, and in which it has been concluded that funding operations were largely substitutional, instead of complementary, for short-term bank borrowings. The evidence indicates that the central banking institutions of this

New Corporate Issues

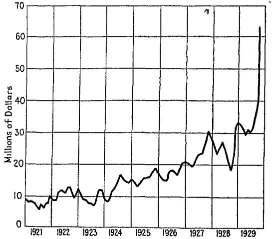

Chart J

country have considerable power to determine the timing of capital operations of business corporations, and consequently of general business activity.

It will be observed, from the preceding charts, however, that the peaks of new corporate issues were usually reached before trade and production had attained maximum momentums.

May it not then be argued with some confidence that the increase of new corporate issues in 1922 was a prominent factor in the recovery which culminated in 1923; that the new security issues of 1924 stimulated the trade improvement of 1925; that the new peak of corporate

issues in 1925 bore a direct relationship to the high level of business activity in 1926; that the enormous volume of new issues in 1927 had much to do with the recovery of 1928. Certainly the Reserve Banks should not be put in a criticizable position if in times of reaction their credit operations could be held responsible for subsequent enlargements in security activity and security prices.

To all of this it might be replied that the use of special powers to curb the credit demands of the security market would be made discretionary upon the reserve administration and that it would be principally in times of excessive confidence that such authority would be invoked. To which we should agree that if the reserve administration were all-wise in its diagnosis of the characteristics of the business situation, and if it were also immune from unthoughtful pressure either by the national legislative bodies or by the general public, confidence might be reposed in the wise exercise by the reserve administration of its discretionary powers. But it does not seem that any such confidence would be justified. The business cycle is not the simple phenomenon it is often asserted to be; there are always cross currents, with many important forces running counter to the average trend; and different measures of even the aggregate of trade or production show frequent disagreement. It would be extremely difficult to pick out precise periods when extranormal security activity might be regarded as essential to business recovery. To illustrate all this, popular opinion would undoubtedly hold that security activity had been of excessive volume ever since the Coolidge bull market began in 1924.

Special powers to restrain the employment of credit by security purchasers also imply that speculation is an evil, perhaps necessary, which should be confined within the narrowest limits. In the estimation of a conscien-

tious, but necessarily poorly informed, public, any reserve administration, possessed of special powers of restraint, would be derelict in its duty if, in times of depression, when the borrowing power of many small business men is inevitably restricted, the Reserve Banks should operate in such a way as to increase the supply of credit employed in security operations. But at such a time the indirect stimulation of security activity might be highly desirable. No statute should be enacted implying that security credits are *per se* objectionable. Increases of security credits are perhaps to be encouraged when confidence is ebbing, just as decreases should be worked for when inflation threatens.

In reply to our objection that the conveyance to the Reserve Banks of discretionary powers to restrict the use of reserve credit would require correct diagnosis of the business situation, it might be insisted that any successful administration of the reserve system demands precisely this skill. Of the truth of this statement we are, however, by no means convinced. May it not be contended that booms cannot develop far unless the general credit volume has grown excessively; that, on the other hand, subnormal activity can be countered by easing the credit market? Is it not possible that a policy of confining credit expansion to a rate closely related to the country's long-time physical growth would go far to eliminate the peaks and troughs of the so-called business cycle? By steadying the total mass of credit in use, would not the Reserve Banks also help in about the maximum degree possible to eliminate unevenness in industrial growth? But the aggregate mass of credit outstanding cannot be steadied save by operating at certain times in such a way as to stimulate security activity.

All of the preceding seems to argue in behalf of the position that the correction of an excessive security-market demand for credit is to be found in the exercise

of the general powers of the Reserve Banks. To this it may be replied that in 1928 and 1929 the utilization of present powers of restraint—including discount-rate increases, sales of securities, warnings, advice, and direct refusals of discount applications—did not succeed. In our view, however, this indictment of the efficacy of present weapons falls to the ground on two counts. In the first place, the restraining devices of the Reserve Banks were employed too mildly in the spring of 1928, with the consequence that the market became gradually accustomed to higher money rates and did not react to the anticipated extent. In the second place, the runaway security market of 1928 and 1929 developed out of the highly excessive rate of credit expansion in the fall of 1927. It has not been proved that greater moderation in the easing measures of 1927 would not have avoided a large part of the excesses of 1928 and 1929.

With respect to the argument that the coercive measures of the spring of 1928 should have been more vigorous it must be recalled that the efficacy of reserve activities depends very largely upon proper timing and administration. Unless the Reserve Banks act promptly, their efforts must frequently be nullified. For one matter there is the danger of offsetting gold movements. If, for instance, money rates in the central markets are gradually lifted, gold imports may be encouraged which go far to lessen the influence of any restrictive measures employed by the Reserve Banks. In such a situation the success of reserve policy depends upon producing the desired result before offsetting gold movements develop and before such inflows have time to operate with complete force. More experience is required in the administration of present powers before even the disaster of 1929 can be held to indicate the need of providing the Reserve Banks with special powers to direct the use of bank credit away from speculative channels.

CHAPTER VI

AFTER THE CRASH—CONCLUSIONS

I. PANIC OPERATIONS

In periods of threatening panic and wholesale liquidation of values, the prime obligation of any central banking system is to operate in such a way as to abate the consequences of the general decline in confidence. To this responsibility all other considerations must be subordinated. Even though values may have been so thoroughly inflated that violent contraction is necessary in order to restore buyers' enthusiasm, central banking relief is no less urgently required. The decline in confidence itself can be depended upon to produce general deflation; and the important problem becomes that of preventing such disorderly liquidation as may threaten to restrict the supply of credit available for really solvent borrowers.[1]

So far as meeting panic requirements is concerned, the Reserve Banks acted with promptness immediately upon news of the October, 1929, reaction. Before the crash, on Oct. 23, the New York Reserve Bank had let its portfolio of government securities fall to the insignificant figure of $17,000,000. In the endeavor to allay credit pressure resulting in large part from the withdrawal of funds by out-of-town institutions, holdings of governments were increased to $158,000,000 on Oct. 30 and to $159,000,000 on Nov. 13, at about which figure this class of earning assets fluctuated during the remainder of the month. These operations relieved member banks of the necessity of discounting with

[1] If this reads like a crib from R. G. Hawtrey, let it pass as an expression of admiration for this English monetary theorist.

the Reserve Banks in the amounts which otherwise would have been required. Even with this aid, however, member banks found it necessary to engage for a brief period in a tremendously enlarged volume of discounting. Borrowings of member banks at New York, which had fallen to $107,000,000 on Oct. 23, increased to $246,000,000 on Oct. 30 and stood at $221,000,000 on Nov. 6. After Nov. 6, member-bank discounts quickly subsided to figures not far out of line with those prevailing before the crash on the exchange. Call-loan renewal rates, which averaged 8.50 per cent in September and 6.43 per cent in October, fell to 5.44 per cent in November and 4.83 in December. Had it not been regarded as desirable to peg the official minimum money rates on the exchange the above-stated rates would undoubtedly have drifted considerably lower. On many occasions, with rates quoted at 5 or 6 per cent, it was reported that money was available outside the exchange at 3 per cent, or less.

With the changed conditions in the money market, the New York Reserve Bank's rate was cut to 5 per cent on Nov. 1 and to 4.5 per cent on Nov. 15. Proportionate reductions were also effected in bill-purchase rates.

That federal reserve aid was sorely required during the weeks of liquidation is indicated by the various figures bearing upon the withdrawal of credit from stock-market uses. Between Oct. 23 and Oct. 30 brokers' loans placed by New York City banks for the account of "others" were reduced about $1,300,000,000, and for banks outside New York City $700,000,000.

As a system designed to mitigate the intensity of money panics, the Reserve Banks again proved their worth and gained considerably in prestige. In the money centers, particularly New York and Chicago, praise was bestowed both because the Reserve Banks there operating had the foresight to restrict their own advances before the crash and also because of the success they had realized in inducing their own member banks to

restrict loans to operators on the exchange. At New York it had been understood thoroughly that, even though speculative operations had been financed very largely by "accelerated velocity," nevertheless, operations reducing velocity could be met successfully only by maintaining a plentiful "supply" of bank credit.

II. THE EVENTS OF THE CRASH IN THEIR BEARING UPON THE "ABSORPTION" OF CREDIT IN SPECULATIVE OPERATIONS

In the previous chapter the general conclusion was reached that the huge security operations of 1928 and 1929 had been financed principally by more rapid credit turnovers and only to a limited extent by any positive absorption of the bank credit supply. In view of this conclusion, it would not be proper to dismiss the events of the liquidation period without inquiring about the effect of reduced security operations upon the demand for bank credit in the aggregate. If the credit volume fell off considerably after the crash, with proper allowance made for seasonal factors, there would be stronger reason to presume that large amounts of bank credit had previously been absorbed.

Consulting first the course of member-bank reserve balances, which do not undergo wide fluctuations on account of seasonal influences, we fail to find therein evidence of any sudden contraction in the country's total of bank credit in the months immediately following the crash. Thus:

TABLE XXX.—MEMBER-BANK RESERVE BALANCES[1]
(Millions of dollars)

1929:	
September	2,335
October	2,386
November	2,521
December	2,395
1930:	
January	2,349

[1] Monthly averages of weekly figures.

Much the same conclusion is suggested by examining the total loans and investments of reporting member banks. Thus:

TABLE XXXI.—LOANS AND INVESTMENTS OF REPORTING MEMBER BANKS

Month	Total,[1] millions of dollars	Per annum percentage increase or decrease over sixth preceding month	Percentage increase or decrease over the same month of previous year
1929:			
September	22,646	−1 4	−3.5
October	23,124	−6.4	−5 4
November	23,663	−14.0	−7 6
December	23,012	−7.0	−3 7
1930:			
January	22,368	−1.0	−0.2
Average	.	−6 9	−4 1

[1] Monthly averages of weekly figures.

While the supply of member-bank credit was thus holding up, the collateral borrowings of the members of the New York Exchange diminished $2,400,000,000 in October, another $2,000,000,000 in November, and a few millions in immediately succeeding months. The withdrawal of the "absorbed" credit from the security markets evidently did not do much to reduce the outstanding volume of bank credit in the country, and, therefore, it seems all the more doubtful whether the actual absorption had ever been very great. Of course, it might be argued that panic ordinarily increases the demand for "carrying" credits by temporarily embarrassed concerns and that, had it not been for the release of credit absorbed on the exchanges, the demand for new bank credit by general business in the fall of 1929 would have grown much more than it did. But, on the

other hand, the amount of credit used on the exchanges before the crash had been so great that its return to industry, assuming it had ever been completely withdrawn, must have abated considerably industry's other credit demands.

In the months in which we are interested, neither price nor production indices evidence the need of any increase in the volume of bank credit. The Board's seasonally corrected Index of Production in Basic Industries diminished from 117 in October to 99 in December, 1929, and the B. L. S. Wholesale Price relatives fell from 96.3 to 94.2 in the same months. There is little in the events following the October crash to disprove the contention that security operations had been financed during the boom very largely by the use of credit which otherwise would have been idle. Further indication of the correctness of this position is supplied by the rapid decline in the New York Reserve Bank's relatives of velocity. Thus:

TABLE XXXII.—VELOCITY OF BANK DEPOSITS IN NEW YORK CITY

Month	Relatives
1929:	
September	242
October	244
November	189
December	139
1930:	
January	129

Incidentally, the percentage reduction of velocity relatives closely parallels that of the decline in the number of shares traded on the New York Stock Exchange.

III. THE AMELIORATION OF BUSINESS DISTURBANCES

Having proved their power to prevent the speculative collapse from degenerating into a credit panic, the Reserve Banks were shortly in a position to devote their

major efforts to the amelioration of declining tendencies in business. By increasing their purchases of government securities to the extent before indicated, the money market was so eased that on Nov. 15 the New York Bank was able to reduce its rate to 4.5 per cent. At this figure the discount rate remained until Feb. 7, 1930, when it was lowered to 4 per cent. March 13 it was again reduced, on this occasion to 3.5 per cent.

During these operations, the most widespread criticism of Reserve Bank policy asserted that the rate had been lowered too rapidly rather than too slowly and that the Reserve Banks were encouraging the revival of a new speculative boom. In the writer's opinion, however, there was much stronger ground for holding that the rate reductions had been too gradual and long delayed. In an abstract economic sense, a depression is a period in which the forces of revival are being developed. Depressions are drawn out longer than they need be simply because of the time required to get economic forces properly adjusted. As far as the credit factor is concerned, the greater part of recent experience[1] seemed to show that a Reserve Bank rate as high as 4 per cent had been somewhat restrictive and had retarded expansion of member-bank credit at a normal rate. Should not then the Reserve Banks have got down close to their minimum rate—say to 3 per cent—just as soon as it was clear that the boom was definitely terminated? Would not such action have made it clear to users of credit that there would be less to gain by further postponement of operations requiring either commercial bank or investment credit?

Replies to the foregoing query should undoubtedly stress two points. In the first place, rapid reductions to minimum rate levels might have used up prematurely too much of the material required to facilitate revival.

[1] Except in 1928 and 1929.

Many previous depression periods had shown conclusively that something more than low money rates is necessary to dispel pessimism. Business plans must be sufficiently completed in paper form; there must be time for confidence to be regenerated; projects in one field must be properly coordinated with respect to those in others. In his conferences with business leaders the President was, as far as executive interference is concerned, treading on new ground; the White House efforts might yield little result except to advertise the seriousness of the industrial situation. What if a secondary relapse should threaten to develop shortly? Would it not then be most desirable that further favorable action of the importance of a discount-rate reduction be capable of initiation in order to offset untoward developments? In other words, the material necessary for revival should not all be utilized at once.

In the second place, objection to rapid rate reductions might be based on technical financial considerations. It had become gospel in reserve circles that reserve rates must be properly aligned with other rates in the open market. To bring down these other rates purchases of government securities might have been made much larger, and in this way the market prepared earlier for Reserve Bank reductions. But foreign markets could not thus be prepared; and, in particular, low rates in New York might have accelerated the loss of gold to other countries, a loss which, immediately after the stock-market crash, assumed very large dimensions and threatened to restrict the easing influence of the Reserve Bank activities.

In November, 1929, this country's net exports of gold were $23,000,000, and in December, $64,000,000. These shipments facilitated reductions of rates by foreign central banks, so that on Jan. 30, 1930, the Bank of France lowered its rate to 3 per cent, an action which

was shortly followed by a reduction on Feb. 5 of the Reichsbank rate to 6 per cent and of the Bank of England's official rate to 4.5 per cent on Feb. 6. In January also the important foreign exchanges in New York fell away from the gold-export point and very abruptly the direction of the gold movement changed. In January this country gained $4,000,000 of gold; and in February about $55,000,000. By delaying briefly further reductions after Nov. 15, 1929 the New York Reserve Bank was shortly in a position to lower its rate to minimum levels without immediate danger of offsetting gold withdrawals.

IV. WAS THE STOCK-MARKET CRASH THE PRINCIPAL CAUSE OF THE BUSINESS DEPRESSION?

A necessary inquiry before these pages are completed is the extent to which the general business depression of 1929 and 1930 can be attributed to the stock-market collapse of October and November, 1929. If the trade reaction did result principally from the panic on the exchanges, we have a stronger argument for interference by the reserve authorities with the development of security market booms. Trade reactions thrust upon the Reserve Banks enlarged demands for credits to carry over embarrassed enterprises, and, therefore, in anticipation of such demands the Reserve Banks would seem to be fully justified in taking action to restrict the degree of speculative enthusiasm during the boom so that after a possible collapse requests for reserve credit will not be immoderately excessive. If speculative collapses can be held largely responsible for business woes, it becomes perhaps unnecessary even to inquire whether, and the extent to which, security demands during the bull market may have deprived other business of credit. The consequence of a speculative collapse upon business enthusiasm, if serious, would of itself afford justification for preliminary curbing measures.

In line with the theory that the business depression of the winter of 1929 and 1930 was born of the previous stock-market collapse and need not otherwise have occurred, a large amount of affirmative evidence may be cited. First of all, ticker difficulties during the panic days may be recalled in order to show that industrial ills were not responsible for the crash. In the inability to get quotations promptly, frightened traders were forced, so it was alleged, in order to be reasonably certain of effecting sales, to put in orders "at the market," instead of at particular prices. Under these circumstances, bear raiders knew that continued selling would take place no matter how low quotations might fall. Ordinarily, when liquidation is orderly, sales decline as prices fall, but the reverse perhaps was more true of the panic days of October, 1929.

In order further to assert the technical or artificial character of the collapse, reference might be made to the operations of the investment trusts. It is held that these organizations, in apprehension of the crash and in view of the prevailing high rates on street loans, withdrew large funds from the public by their own issues and failed to reinvest these resources promptly in other securities.[1] In these and other ways, support was withdrawn from the market so that the wholesale collapse resulted which, by a variety of processes, was communicated to industry and commerce. As soon as the depression did manifest itself in general business, the collapse of securities seemed reasonable, and prevailing comment assumed as a matter of course that the previous stock-market boom had been thoroughly unjustified. But would it have seemed so completely illogical if the trade reaction had not developed, and would there have been any pronounced trade recession if,

[1] In the current bulletins of the Cleveland Trust Company large emphasis was given to this aspect of the situation.

on account of purely technical factors, the stock market had not collapsed and destroyed business confidence?

It is not difficult, however, to find evidence that the business depression was born largely of causes independent of the stock-market crash. In the first place, most indices of the physical volume of trade and production began their descent from the high point of 1929 several months before the crash. The *New York Times Annalist* Index of Business Activity, for instance, achieved its high for the year in May, 1929, with a combined relative of 108.8. It is true that by September this Index had fallen only to 105.8. But usually changes in the momentum of these curves are moderate around the turning points. Activity in one field ordinarily does not fall off sharply until there has been time for pessimism to be communicated from others. When it has become clear, however, that activity elsewhere is declining, *enterpreneurs* in one field take cues from others, and thus after a time the rate of acceleration of the reaction is intensified. In other words, late in October, physical production may have registered enough of recession to absolve that of the remaining months of the year from the indictment of proceeding principally from the reaction on the exchanges.

But this is not all. Productive accomplishments in industry generally had been of tremendous volume in the first half of 1929. Not since 1923, for instance, had the Annalist Index[1] reached so high a point as that achieved in May, 1929. In automobiles, the 1929 output had by the close of August come close to matching the entire 12 months' production of any previous year. Similarly, steel-ingot production in the first three quarters of 1929 was almost the equivalent of the total output of 1927. The record production in many leading industries in the first half of 1929 had further-

[1] Adjusted for seasonal as well as secular tendencies.

more been preceded by the very high outputs of 1928. In view of the extent to which past averages had been exceeded before the crash, the decline of production below most computed normals after the crash does not now seem so illogical even though the influence of the stock-market reaction be left out of account.

After the stock-market collapse in the fall of 1929 one of the most discouraging phenomena was the growing weakness of many important commodities. Here again, however, the decline had been well underway before the crash. Wholesale cotton was at the highest point for the year in March, hogs in July, steel billets in May, rubber in May, wheat in July. The B. L. S. All Commodity Index stood at 98 in July and thereafter underwent a decline in every succeeding month. It is thus very difficult to attribute the business depression to the stock-market collapse. The shock to confidence occasioned by the October collapse did not do business any good, but, on the other hand, independently operating factors had for some time been developing with accumulative force to create recession in industry. To the extent that this conclusion is correct there is added reason for holding that stock-market developments should not assume nearly so prominent a place in federal reserve deliberations as is generally asserted even in scientific analyses. This is not, of course, to conclude that at certain stages speculative developments may not supply highly significant evidence of the extent to which the aggregate credit supply of the country has been properly adjusted to industrial requirements.

The main purpose of the writer in engaging in these brief summary analyses has been to indicate the multiplicity of factors which must necessarily enter into the formulation of credit policies by the reserve administration. Monetary laws do not operate with the precision so often implied in formal treatises. Under some

circumstances an excess of credit may manifest itself in one field, under other circumstances in another, and the work of the economist has scarcely begun until he has done all that he can to determine the characteristics of the business and industrial situation in which credit operates. To possess an intelligent understanding of the problems confronting the reserve administration it is necessary to command a broad factual background, and past episodes should not be dismissed either on the ground that they represent ephemeral phases of reserve development or that they no longer are of practical significance. The lessons of the past, the defeats as well as the victories, should supply the training for the future administrators of the system.

In holding that reserve activity must not be restricted by narrow economic considerations, the writer is necessarily pleading for an extension of the influence of the various analytical agencies of the system. Possibly the brightest intellectual achievements of the system's history are supplied by the careful analysis by the New York Reserve Bank of the forces operating in the New York money market;[1] by the New York Bank's efforts to determine needed variations in the country's credit requirements;[2] by the very great progress achieved by the Board's Research Division in providing more accurate measurements of credit and industrial movements than have previously been available to the monetary student.[3] Increasing the influence of the system's analytical agencies provides some guarantee, moreover, that constant changes in the membership of the Board and the district directorates will not involve too much discontinuity of purpose and neglect of experience.

[1] Specific reference should here be made to Randolph Burgess.

[2] Special mention should here be made of Carl Snyder.

[3] The directors of the Board's Division of Research and Statistics have been H. Parker Willis, Walter Stewart, and E. A. Goldenweiser.

In insisting, however, that economic guides to reserve policy should not be narrowly defined, the writer does not mean that all should be left to the discretion of management. An administration with no guiding principles sufficiently well established to serve at least as a point of departure must tend to veer from one extreme to another, from perhaps a too narrowly restrictive policy to one of excessive liberality. Like the rest of us, federal reserve officers and directors, as well as board members, are only human and are subject to the same contagious influences of undue pessimism and extravagant optimism as operate upon the minds of business men. Those who insist that all should depend upon the judgment of management are in effect pleading for a repetition of the 1928-1929 episode, which, according to our view, was due to mistakes, in 1927, not of conception but solely of degree and time of application. What was lacking in 1927 was a standard for determining the degree of credit alleviation required. The reserve system's objectives should not be narrowly defined from the outside, but, on the other hand, within the system some broad basis of policy should be agreed upon sufficiently comprehensive in scope to require a preponderating mass of contradictory evidence in order to justify wide deviation.

In our examination of special periods we have concluded that mistakes have usually been later admitted whenever the aggregate credit supply of the country has been permitted to undergo pronounced fluctuations for any extended period of time. The stabilization of business seems to be very largely a matter of avoiding serious departures from a rate of credit enlargement corresponding roughly to the physical growth of the country's trade.

Without some such provisional policy as the avoidance of wide fluctuations in the credit volume the reserve

administration can have no definite standard for estimating the influence of its operations. Money rates, ruling in the financial centers, are poor indicators of the supply and cost of credit elsewhere; and, furthermore, on account of changed psychological, or institutional factors, the future money market may display either rising or falling secular tendencies. Indices of commodity prices, according to our view, constitute only limited evidence of the adequacy of the general mass of bank credit.

The view that industry's need for credit does not undergo wide fluctuations has in the opinion of many students been disproved by the events of 1928 and 1929 when security turnovers increased so tremendously the utilization of credit in the financial centers. If brokers' loans increased so many billions in 1929 over, say, 1923, must not other business have suffered because of this diversion of credit to security-market uses unless additional offsetting credit was provided? It was partly on account of this possibility that we were impelled to inquire whether credit employed in the security markets was really withdrawn from other uses. In concluding that security credit requirements were met principally by utilizing credit during its otherwise idle periods we but confirmed our long-standing theoretical opinion that velocity can do much to finance transactions in resalable commodities, even though little elsewhere. Variations in the volume of goods' turnovers do not necessitate large fluctuations in the total supply of bank credit.

Within the system the leading advocate of the doctrine that the bank credit volume should be restricted within a narrow zone of fluctuation has been Carl Snyder, statistician of the New York Reserve Bank. As his views were first formulated, before the spectacular events of 1928 and 1929, it was even asserted that little

variation in the outstanding mass of bank credit was required on account of seasonal fluctuations in the volume of business. It was argued that velocity changes would provide sufficient slack for both seasonal and cyclical fluctuations so that the problem of reserve administration is primarily that of adjusting the mass of member-bank credit to the secular growth of trade.

During 1928 and 1929 velocity relatives, however, increased tremendously and threatened to run off the top of most previously constructed charts. It became quite clear that earlier variations in velocity had been relatively narrow and it now seemed that velocity might do much more than merely accommodate seasonal and cyclical fluctuations in physical trade. But instead of this development's injuring the doctrine of steadying the mass of member-bank credit it really strengthened the argument considerably. Previously it had been clear enough that the physical volume of goods, which enter into the country's trade, fluctuates within more moderate limits than had been earlier surmised. But credit is needed not only on account of the aggregate supply of goods and services but also on account of their turnovers. If turnovers in the hands of middlemen and elsewhere should increase tremendously, would not a greatly enhanced volume of credit be required to facilitate distribution? All the more appealing became this objection to the credit stabilization doctrine when it was recalled that the most important classes of resalable goods are securities. In security operations, particularly, there may be enormous fluctuations in the extent to which in the course of a given period of time the average stock or bond passes from hand to hand.

Critical study of the 1928–1929 period, however, showed that the increased turnover of securities was met very largely by accelerated turnovers of dollars of bank credit. Velocity increases were far more

important than additions to the bank credit volume in financing the enlarged volume of security transactions. Presumably the same observation, even to a lesser extent, would hold for accelerated turnovers of other goods prior to the time of their utilization by consumers.

In the ability, then, to depend upon velocity to take care of accelerated goods' turnovers, all the more confidence can be reposed in the doctrine that the actual supply of credit needs to undergo little more fluctuation than the physical accomplishments of production and distribution, which we know to be confined, except for long-time secular changes, within rather narrow limits. But the supply of bank credit should be adjusted on account of seasonal influences and it is in this theoretical position that the program of stabilizing the outstanding mass of member-bank credit now remains and probably will continue to remain until, or unless, our understanding of trade and production movements considerably improves.

In all discussions of domestic credit requirements it is to be admitted that international considerations may intervene. In the gold-standard world, gold reserves govern the maximum supply of credit and other currency, and it may not be possible for banking systems in the future to increase their advances year by year in sufficient volume to take care of the growing physical volume of trade. If the future gold supply in the world at large is deficient from the standpoint of physical trade, the pinch must be felt in some countries and create complications for others. But scarcity of gold should not be admitted until every reasonable effort has been made to secure international cooperation in economizing the use of gold. Until efforts of this sort have been exhausted, there should be no abandonment of endeavors to adapt the rate of increase in the credit supply of this country much more closely to the long-time growth in the physical volume of trade than heretofore has been accomplished.

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